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*Josiah White's
History
given by himself*

California
Regional
Facility

Perigine White -

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History
given by himself

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The Journal of Josiah White is published, as giving in detail the circumstances which led to the introduction of Canal Navigation and the use of Anthracite Coal in Pennsylvania.

Through the courtesy of Messrs. George Foster White and Daniel S. White, great nephews of Josiah White, owners of the original manuscript, one hundred copies have been printed for private distribution,

of which this is No.

Presented to

by The Lehigh Coal and Navigation Company.

Date

J. White's History

Untill about the age of 13, I had thought that Play, such as school boys had, was the business which gave the greatest enjoyment, & I dreaded the period when I should arive at manhood, as I felt I should then be ashamed to play; believing play was for boys & something of a usefull charactor would be the leading object of man. during my 14th year, I for the first saw the utility of Education & felt a pleasure for the first of my life in Learning, previous to this year I did not believe Education of much value. My schoolmaster, instead of impressing on his Schollers the advantage, Said to them, here is the Rod, pointing to it & you know your lessons to be got, & you get one or the other.

About the age of 15 I went apprentis to Ja^s Hutton in Philadelphia to lern the Hardware business, for the purpose of lerning a business that was to give me a living. My Mother was invited to Philadelphia (we then lived in Mount-holly New Jersey) to attend the Marriage of My Aunt Hannah Pryor, with Daniel Drinker & she took me along for the purpose of getting me apprenticed to some business in Philad^a. My aunt Rebecca Redman join'd my mother & self, to hunt a place for me. My aunt prefered a Taylor, or a merchant taylor, for me. My mother, urged no trade in particular, But had allways inculcated in her children a dislike to Store keeping as encourigeing, Pride & Idleness & Rather tending

1897

(shd be
1797)

to a cunning, craftiness, that she was fearfull would be a disadvantage to us. We called on all the friends we heard might want Boys. I prefered a mechanical Trade, a joiner or Carpenter as I was fond of tools.

We called (among others) on Daniel Trotter & John Webb, Cabinetmakers, the former did not want & the Latter said he could not take more Boys. Flour was dear, & he could not afford to keep more.

We called on Wm. Ashby & Benjⁿ. Ferguson- Taylors, who were then doing a thriving business, but neither wanted Boys; and after nearly a day's walk over town, We Returned hopeless of finding a place. On mentioning the next day to my Unkle Dan^l Drinker, he said; a freind of his wanted a Boy, at the Hardware Business!! I knew nothing about this business, never having heard of such a business, but Rather than miss of a place, at once concluded to go to My Unkles friend.

On passing up 2nd St by Trotters Alley, It ocured to me that I was Rather quick, in entertaing a new business & that it might not answer the purpose; I intended, by going an apprentes that is to make a living, & if it did not I would stay at Home; I immediately asked Unkle, if it was a business, I could make a living & money at, after I was of age; & if it was a Respectable business, & if the Freind was a well disposed Man! To which my Unkle Replied to all the questions affirmitively & then informed me that it was the same business he had followed. I at once concluded, that as my unkle had made his money by it, & He was Represented as Ritch, it was enquiry en^o. & I would (as I thought I would) like any Business that answered my purpose, of gaining a living in an honest way. I accordingly proceeded with my Unkle about 200 yards further to His Freind, James Hutton, No. 53 Market St. who kept a small Hardware store & who engaged

me at once, & I promised to come to him in about 2 or 4 weeks. He agreed to find Board^s & Wash^s & pay me 20 dollars a year. I was then about 15 years old.

My Master proved to be a kind well disposed man, but a Lazy one, & left most of his business to me after I had been with him 1 or 2 years. Our practice was to mark the sterling cost, on the goods, & each article Required a calculation to give the price, wich was 150 166 $\frac{2}{3}$ 175 & 200 p. C^t advance, & say 10 p. C^t on the latter for Retail, so that when my Master sold, I had to be at his elbow to calculate the price.

I also kept his books after two years & also Blacked his shoes! & my mistress told me if I did not help the Girl bring her buckets & tubs of water from the River to wash with, my cloths should not be washed. I did not go often for Water & in about 3 or 4 years objected to blacking my Masters shoes. I allways set at 2nd table with the kitchen Girls, after being a month or 2 in the City, untill nigh of age. My Master had a high notion of the shipping business, as it gave so little labour, & would often send small adventures. Finally George Pennock & Gideon Hillwell & himself bought a quantity of Tryash Coffee & ship'^d it to Hamburg, & Reciprocally endorsed eachothers paper to pay for it. On this my Master made £500 a £600, which was so handsome a profit & not a weeks labour that it increased his allready too idle habits. He was now in debt, & concluded he would make more money by Building Houses, & supply Hardware to Carpenters & take his pay in work on his houses & by sell^g them get his money. However the more he Built the more he got in Debt & the More His Carpenters got in debt to him.

He was perswarded to set up a Bakery, & his Baker made him beleive with a little money he could make say 15 a 20 p C^t profit & he would do all the labour. He thus expected the Cream, to himself, but this turned out Skim milk also.

By the time I was near 20 years old, I thought I had better learn another trade, as this small business I was learning I thought not enough. But this project was soon stopped by my Master asking me \$500 for my last year, which I thought I could not afford to pay. Its true I was not bound nor had I ever agreed positively to stay. He had once asked me, if I was satisfied to stay & should wish to know in 2 or 3 weeks. But he never asked me further, & I never told him, I however stay'd this implied I was satisfied & I then felt this implication, plenty strong to bind me, so I staid as a measure of duty, which conclusion no doubt was of after use to me, as it tended to keep my habits settled.

I believed my Master was losing money some 2 years before I was 21 & pressed on him the propriety of taking Stock to ascertain his Real situation. He had some 3 years before took stock & found he had made about \$3000 a year & I asked him what he thought he was worth. He said about \$10,000. After frequent pressing him he agreed to take stock, but as I had expected, I had to take it essentially myself (owing to his idle habits. I found his Means Reduced to about \$1,000. when I told him the Result he said he must double his diligence

His wife who until then kept me at a distance, & not permitting me to eat with them, now asked me what I would advise. I advised their going on a farm, as he J.H. was brought up to that & was not active enough for keep^r Store. He however continued his Hardware business, & by being more industrious, improved his Estate.

Joseph Dilworth kept a Hardware Store No. 29 Market St. offered me his Stock for sale, as he had failed and was selling out.

He said he failure was owing to his losses in a large quantity of Sour Wine, which he said he bought for say 16½

cents, & as he thought himself smarter than common men, he had concluded, he could find a man, less fool! than himself that would give him 17 cents which would allow him a handsome gain, but He said he found himself the greatest fool, & it broke Him! I was then about 20½ years old & bought the old stock for the sake of getting a good stand for business, which was then verry difficult to get. I was of age 3 mo 4, 1802 & agreed to take the Stock & Store N°. 29 Market St on the 5th of 3rd month 1802, Intending not to loose a day untill I had made as much as I thought en° which was \$40,000, provided I had attained that amount before I was 30 years old. Intending If I was successfull, to then put say \$20,000, on interest to accumulate as I expected 8 times in 36 years, & live on the other \$20,000, in such way as I chose. I then preposd buy^e a farm for say 10 or 12,000, & have the farm & 8 or \$10,000 on interest to make me as nearly independent of all necessary business, & calls from all quarters as in the nature of things & will of Providence I could be.

My aim was to loose no time untill I had made en° & then to have the Balance of the time a Good providence allotted me, appropriated in such a way as would give me the most comfort, the Balance of my Life, & be a good example to others to go & do likewise, and thus proove to the World that I could make Wise Resolutions & also keep to them.

About 18 months before I was 21, I was sent alone to Marden Creek by my Master to take account of a stock of store goods he had there in partnership with Levi Pilkington, this was about 70 miles from Phil^a. & the first time I had been over 40 miles from home

Before I was 21, I prevailed on my Mother to allow me to sell my patrimony, so as to be Ready to go into Trade immediately on my being of age so as to loose no time. For

I well knew at this time, I should go but once through the world! & a day lost was not to be Regained.

I sold most of my Estate to be paid me in time for my business, & when necessary my Mother went security for my performing my agreements when of Legal age. My Estate amounted to between \$5000 to \$6000, all of which I was careful to confirm early after arriving of age

The old Stock was about \$1,000, & I ordered from England about \$5000, to come in the spring I was of age. But before the first goods came in in the spring I had to order goods from England for Fall, which I did to amt of say \$4,000 & thus I was fairly with all my caution on the Sea of Credit.

My first years business made me about \$3,000, which however, I lost the whole of by bad debts. After this year I lost but little, & about my 28th. year I sold out my goods to my Brother Joseph White & Sam^l Lippincott. Having by this time attained the amount of property I had promised myself as being en^o.

I knew my propensity for tools & ingenuity was great, & as acquiring property to my limit was as I determined expedient, I gave up promptly all gratification of my nature, in mechanicks of all kinds, for fear it would grow on me to the prejudice of my business, & being fully perswaded that the most agreeable way of getting along with any business, I deemed necessary, was to lay down or aside all things that clog'd this business, and make it a strong point to endeavour to like whatever business I judged was necessary to me & then to quit it in to to.

I now having obtained the amt of property up to my early desire, & had lost no time, & being within the period fixed, I concluded that I would be able to present at least one case to the World of a man see^s his way aforehand, & come out a strictly moral & I hoped a Religious minded man. No morn-

ing, me thought, ever opened more clear, than It now presented, of having passed through One of my great Clamatrix of life, & Realized by my industry & integrity, my best anticipations!! I now thought I had so much experience to stand on, & that with this experience, & not, an abateing feeling to do aught but what was strictly Right in the eye of my Maker or my fellow man, I thought if any man ever had good hopes to Rely on, for a peacefull, pleasant & moderate Progress to & end of the balance of his Life, I then had!! In fine I fully though my days work of toil & labour was over & gone by for ever! & that I now for the Remainder of my Life had to expect a full share of peace with God & man, & I fain hoped to be usefull to the latter, in person & in means & dutifull to the former, so as to step from a peacefull journey through this world, to the one that never ends, in the way, that would be pleasing to him who keeps his mantions allways Ready for all those who do his Fathers will.

during the two years I was out of business I took a tour to Georgia by Sea & Returned by Land. I was invited by Barrack Gibbons to go with him to see his River Plantation near Savanna He had just Returned from a tour to the North (now 11th month) & his slaves now first seen him after his Return, & they Received him as kind as if he was a near friend!

I concluded on the whole, the Slave owners, had something to gratify their pride by their contrast with ther slave, but that their comforts were much fewer than those citizens in the north of the same wealth. & that the northern Labour was cheaper than the southern, which cost as I estimated an average of \$40 each a year, considering the large portion of useless persons, & indiferent labourers, & the small amount of labour done by the best hand, & all were to be supported, & in the Large cities, & some places in the Country they had

to padrole the towns & Country, every night for fear of a Rising of the Blacks. 100 Blacks on the average turns out but about $\frac{1}{3}$ or 33 prime hands, the others are too young or too old, lazy or wicked or sick.

I kept generally engaged at making & contriving matters & things I thought usefull to myself or others. I allow'd myself to spend \$500, a year in these gratifications.

I looked out for a good farm with a small water power on to aid me in my ingenious notions, & the farm for my living as before mentioned. I wished to live entirely independent on my farm, intended to plant sugar maple to make my sugar &c to carry out a more complete independence I felt 2 ambitious, & I thought it was but Right to now pursue a plan of business & Life, that would be a pattern for others, as giving the greatest Comfort possible, in this Life & prove by our exemplary Conduct, that we was allways Ready to step from the life, that I had lived well in, to the other which never ends in an acceptable state.

Two years (about) now elapsed by the spring of 1810 since I had declined business. A water power was offered for sale by Robert Kennedy, of all the power of the River Schuylkill at the falls, the fall $3\frac{1}{2}$ or 4 ft & a Right to put a Lock which was to pay fifty cents a boat on each for passing it say 3 or 4 acres on East side & say 7 or 8 acres & old Tavern house on West side of the Bridge & adjoining it.

It occured to me that this might be a Providential case, & also carrying out my old plan.

Here was an improvement to be made by Dams & Locks & Resulting in a large water power, nearest to Philad^a. But it would take Money & perseverance & injenuity to carry it through, & if I succeeded, it would lead to a similar improvement in the interior of Penns^a. which would be of great public good. While the water power & the Falls would

make it a profitable investment to me & fully as well as to invest my capital elsewhere.

But where was the person to undertake it. No Dam had ever been put in Schuyl^l. or any other stream in this Country so large as Schuylkill!! Neither had Locks ever succeed^d in Penns^a. except 2 at York Haven Susq^a.

The Schuylkill & Susq^a & the Union Canal had fail^d & was given up!!

In fact no public improovement by navigation Had yet succeeded in Penns^a so as to pay any dividend!! The City of Philad^a was supplied with Schuylkill water by steam power, as there was no faith in a water power from the Schuylkill, as it was believed there was no security in any Dams on so large a stream standing.

under all these circumstances I thought perhaps I had been favoured with complete success in my business for the verry purpose of enabeling me to do this great work, & that I now was blessed with the means & ability of body & mind to carry it out, as I thought. And that while I was carrying out so much good for the public, I wouuld not impair my Estate, or that it would increase as fast as if I done no business and allowed the interest to accumulate.

Here was a choice between apply^s my means & my talents, in a way of singular use to My fellow being & not impair my Estate, & not as I thought envolve me in pleage or trouble, & thus myself & others would be benefited, & especially & I believed I had discovered the true plan of Making Dams secure by the manner of laying the stone or material on it instead of against it.

on the other hand I could Rent out my money on interest, do nothing for others but pass down the hill of life without good or harm to others, & allso be free from care &

trouble Here was the two Alternatives openly before my mind for some weeks before I made up my mind.

I finally concluded that I would be more likely to be happy in this world, & in the other also; if I took the course that would be usefull to others, in all my undertakings & not to eat my bread alone & in idleness.

In consequence of this Resolution I bought the Falls of Schuylkill for its water power & gave \$14,000 for it in the Spring of 1810. I had not been in possession of it 12 months, before I discovered I had jumped out of the frying pan into the fire.

I had supposed I could make the improvement necessary to make it productive, soon, & perfect it within my fortune! but I soon discovered my error & instead of the man of Leisure, to Secure myself from Ruin, I must leave all my mechanical amusements & strip & turn into the Ruffest & most exposed part of the business, & in cold weather up to my Brest in water, to Raise stone out of the channel, & in truth I had to say to my Workmen come boys, in the place of as I had expected after I had made my fortune, to say, go boys!

Wether my decission to purchase the Falls was a correct or an incorrect course, I must leave. I certainly endeavoured to feel for the best direction, & do not think I was mooved by any Caprice, or carelessness, in the conclusion! I supposed I was doing all for the best, & that in the purchase I was carry^g out my original Resolutions of complete independence.

But having got into the Dilemma, I got into a sea of trouble & disappointment, from which I was entirely unable to extricate myself with any propriety for about 7 years.

Some of my nearest friends during this trying period advised me to give up the works & property, but this would be at a total loss of the property, for if I sacrafised it to get

myself out of the difficulties It would be seen as a property equally difficult to manage to others; so that I could not expect others to buy it, when I who knew all about it, thought fit to forsake it: so that I could expect to get comparatively nothing for it, & the consequence to me would be a total loss of it, (which in a year or two embraced nearly or quite my whole Estate) & also a total Loss of my character as a man of decernment & stability too. And it Resulted that I never had a fair opportunity to sell a part, or the whole of it that I did not embrace!!

The Winter of 1812-13, I petitioned the Ledgeslature for self and Co. to Improve Schuylkill by Slackwater Navigation, & informed the members of coal up Schuylkill, which General Porter affirmed to me he had lived there & knew there was plenty, I told member of it. But Fred^k Fraily Senator from Orwickb^s deny'd, said there was a black stone there but it would not burn. I gave the Ledgeslature the draft of a bill which E. Hazard Father wrote for me, & which was the Basis of the Bill they passed for the Public in 1814, 1815.

during the 7 years from the 4 mo 1810 to the 1 or 2 mo 1818, all my efforts to emprove my Estate here so as to make it productive, in the shape of Renting it, independent of my holding an interest in the Rental, by being a party in the business, proved futile. What it produced was what my business connections made it produce. There was a prejudice against the property as a mere Rental Estate, so that the more I Rented the more I increased my business in it. The difficulty of Renting arose from its liability to frequent Back water stop^s the Mills; I try^d to get the City to buy it to get a Water Power for Raising their water in the place of steam Power, without avail. I sold 7/16 my Interes to Joseph Gillingham, but this did not lessen my interest there, it only

enabled me & him to improove the whole power by which I still hoped to creep out by degrees.

I not only invested here all my Estate but the terrible fire which happened 4 mo 1 1815 caught in the small mill which I had sold J. Gillingham we believe from the friction of the Mill Gudgeon, or some of the machinery about Midnight & burnt down both mills. this loss together with loss in our business, obliged me to begin borrowing money, to Rebuild & keep things mov^e on, again, by this course I became a debtor for borrowed money for about \$20,000 by the time I closed my business here.

This seemed to be more of an apprenticeship for something else, than a Regular business to live by, for alltho we succeeded in mak^e wire & wrought Rolled Nails & essentially succeeded in every branch of business we undertook, so far as perfect the articles, we made a wire Bridge at the falls 410 ft span, wire fences &c &c yet none proved profitable. If I had a job in the water works, Requiring lowater, I usually had high water! & most things went against me, to prepare me, seemingly, to endure the worst!!

If I could have, like Jacob, in serving his 7 years seen the Result, I should like him enjoy^d the troubles & disappointments as the terms of purchase of the Boon! But I saw it not, and when I discovered I one day should fall, unless I could get from this place, I & J.G. made the strongest efforts in our power to deal with Philad^a. to supply their Fair Mount Water. I examined the shores down to Gallowhill St Bridge & across the River in several places, one where the Dam now is, & the other nearly opposite Prats House, & then we off^d to City Councils to supply them with 3,000,000 Gallons of water every 24 hours for 20 years for \$25,000 a year & then 3,000,000 Gal every 24 hours at \$3,000 a year for ever. Provided they would issue City Certificats to make the

improv^t on acct of this Annuity & also they to give us their Engines & fixtures at fair Mount & all the City property there & shore below the bridge so that we should have Room to use our Surplus Water, below the Dam. by this Surpluss water we expected to make our Estate whole (supposed it would bring us 25 or 30,000 Doll^s a year & what we got of the City would enable us to make the whole improvement, & erect the mills for Renting, or perfect the sites so as to be able to Rent them. And with the further provision that the Schuylkill Navigation C^o. would authorse us to come down, to any place above Callowhill St bridge, where we thought proper to make our Dam &c.

The Councils of the City appointed a Committee of 3 to meet with us viz W^m Rush, Miller & Moore. Rushes objections was the uncertainty & interruption of this Power like all other water power he said it would be liable to freshets &c, at which time the City might be burnt down.

I answered this, by taking the Com^e to a spike I had drove in the wharf next below the bridge perhaps a year ago, which I gave the history of for a long time, & thus proov^e by my Records as I had expected, that this place was hardly liable to freshets, & that a 5 ft fresh over the Dam at the Falls was not over 5 inches here, owing to the Water being so deep & wide (25 ft deep) a small acceleration of the water by a small Rise with this great depth would take off all freshets. but still they professed to be not Satisfied & after a discussion for several months it was given up, perhaps owing to the Schuylkill C^o declineing to let us moove our Dam; Unless we would take \$100,000 of their stock at par, which we were unable to do.

We closed our vew of dealing with the City in the 11th Month 1817, & my situation at the Falls looked to me like inevitable Ruin of my whole Estate unless I could get away from it & into some other business. We desired the Schuyl-

Proposed
temporary
Impt
to Schl

kill Navⁿ Board to allow us to make some temporary improvement of the Sch^l & use it at a toll of 5 cents a bu = \$1.20 a ton, to this they objected & informed us that a discount of 15 or 25 p C^t less than the cost on a Turnpike was all we ought to expect from them & all they should grant & as a Turnpike cost 15 or 16 cts a ton a Mile this would leave 12 cents a ton a Mile & the distance from the Coal mines to the Falls being say 100 miles would make the cost of coal freight \$12 a ton. entirely discouraged me from any further effort to use the Schuylkill Navigⁿ.

Schuylkill Co.
Refuse a less toll
than \$12 ton

I told them that, adhering to such terms would destroy the usefulness of their Navigⁿ. & would drive the trade in coal to the Lehigh, where I had learnt there was perhaps more than in Schuylkill, & once there or that River improved they might agree to 5 c a bu, but that would not give them the trade. they spurned at my offer of 5 c a bu & laughed at our pretended Rivalship from Lehigh, & thus ended our last intercourse with them on the subject of using their navigation. I felt much in the dark for what course to take seeing as I plainly did, nothing but Ruin by staying at the Falls.

Offer 5c. bu

My fears
of Ruin

I proposed to Jos Gillingham to loan me his Horse to visit the Lehigh to examine it & the mines (for I had none & felt the loss of the money the hiring one would cost) but Jos G Refused, so that I concluded, If anything favourable Resulted, I would keep him clear of it

Gillm wont
lend his horse

I had made enquiry into the ownership & condition of the Lehigh mines & Lehigh River & determined to visit it to see if any thing could be done with them. Geo. F. A. Hauto, was in the practice of occasionally visiting us at the falls, to talk about mashinery &c & I told him of my intention to visit the Lehigh for inspection. he s^d he had a notion of going up Schuylkill to see their mines, & might as well go up Lehigh, as he would have Company.

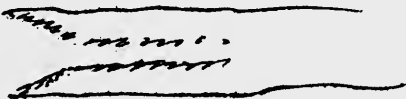
Hautos first
introduction

Wm Brigs my Stone Mason, also wanted a Ride somewhere & He also concluded to go with us; so we 3 went on Horseback & got to Bethlehem on Christmas Eve 1817. We staid at Klutz at Lawsane, & Jno Hogenback at Lehigh on the places nearest to the mines where we could board, while visiting them, which took about one week, being one Eleven miles off & the other 12 miles off.

First visit
to Lehigh

The plan I concluded on was the plan we subsequently adopted, which was to in first place smoothen the old Road of 9 miles which the old Co had raised 10¢ to make to get some coal down, to make a noise in Phil^a. & on succeeding to Raise money afterwards, to make a Road of a Grade which would do for a Rail Road ultimately if we succeeded in sell^g coal, with an uninterrupted declivity. And improve the River by contracting the channel funnel fasion to bring the whole flow of the water at each of the falls, to as narrow a compas, as the law we could get would allow, by thrawing up the Round River stones into low walls, not higher than we wanted to Raise the water, thus

Plan of Channel



& if we had not water sufficient for the Required depth of 15 or 18 inches in by the natural flow to make Artifitial Freshets to seeure any deffitiences, that is by ponding up the water say as many acres as we could get, & letting it off periodically say once in 3 days, I supposed we could gather en^o water, to ensure our Required depth & thus have a Regular decending Navigation. the plan of Locks & gates for letting out the freshet in a proper manner I took for granted I could devise, if found necessary & so left that part for the present. On Returning Home It was concluded that Myself G F A Hauto & Erskine Hazard would Join in the enterprise. I was to find plan, & Hauto the money through his friends & Erskine

Our 3
first agreeing

the Skribe & a good mechanic & excellent councillor. Hoto assured us the larger the plan the easier it would be for him to Raise the money, through his Ritch Friends.

Our speculation was for to procure the Property of the Mines & River, which with our plan should support itself!! especially as neither of us had any money we could then command!!! We 3 at once set about to get a lease of 20 years on the Lehigh Mine C°. Coal lands of 10,000 acres for One Ear of corn a year, if demanded & from & after 3 years to send to Philad^a. at least 40,000 bu of Anthracite coal pr year on our own account, so as to be sure of introducing this coal into market, by which means they would hope to make their mines valuable. for thus far they had prooved valueless to the Lehigh Coal Mine C°. After several efforts to get out coal They had in about 1808 let Rowland & Butland have gratuously coal, on Room Run & Iron ore & Timber for boats for a number of years but they were discouraged without tryal, & in 1812 or 14 leased to J. Cist & Chas Miner & Robinson of Wilkesbarre; for 10 years conditioned for their taking out 10,000 bu a y^r, they took out 2 or 3 ark load part of which they got to Philad^a. & Myself & White & Hazard for the factory at the falls in 1816 bought it principally at 75 cts a bu. but this price did not pay them on account of the badness of the navigation &c & they abandoned it before we got our Lease. They paid \$4 a ton for halling it from the mines to the Landing, at Mauch Chunk, & the Road was so bad the Carter fail^d (by our improvements this cost is reduced to 20 ct a ton)

I ought to have mentioned that the Lehigh Coal Mine C°. had tried to the best of their means to open & work the Mines & get the River Improved & had got a Lottery on which its said they Raised \$10,000, to aid in improv^e the River, for which there had been 5 Laws obtained, but all their efforts fail'd & the River abandoned. and it was not untill the

Procure Lease
of Coal Lands

Old abortion
at Mines & River

Failures at
Mines & River

Lehigh Coal Mine C^o., 2 distinct Individual contracts & Leases had failed in working the Mines & said 5 failures in improving the River & denouncing it as impracticable to improve, that We came forward to improve it, on its own mere merits without \$1000. Capital at our Command!!! So that all old claims on the River & Coal Mines was Cleared off by abandonments.

We soon obtain'd the lease as mentioned which took us say 2 or 3 weeks to perfect, & during this time our Erskine Hazard wrote up the Law on the principles mentioned, & then we 3 posted to Harrisb^g to get it, in which we Succeeded on the 20 March 1818. Jos Gillingham & none of our friends (except^g those connected with us) knew what we was about.

Our beging
on Lehigh

On the 4th month 1818 Erskine & Myself Leveled the River from Stodartsvill to Easton. the Ice had not all disappeared. No House between Lausane & Stoddertsvile we lay out in the woods 6 nights. We borrow'd the Levels of Benjⁿ R. Morgan, who had Retained them as the Relics of the Union Canal C^o. We knew of no other Level in Philad^a & if there had been, we would have been too poor to buy it.

Previous to going on Lehigh to Level it, Erskine & self gave a Power of Attorney to Isaac Salkeld our foreman at the Falls to attend to our Whole business there, so as to have nothing there to draw off our whole attention from Lehigh. Erskine & self had set up all night to settle our Business for the Falls of Sch^l, & then went down to the Stage office to proceed to Stodartsvill to level the Lehigh when we found the Stage had gone about Half hour, which detained us another week, but greatly to our advantage, as the weather got milder & made it saffer & pleasanter to lodge out in the woods which we had to do for 6 nights while leveling the River.

Gave Power of
Atty to J Salkd

We got our Mines, our Law & our Survey or levels of the Lehigh all effected before we knew Hauto had deceived us. The facility of Hotos imposing on us was increased from the necessity of keeping our business quiet untill effected & we then found him useless in Raising money & in fact that he increased our embarrassment in Raising it, for those who knew him, were fearfull of trusting us, for being connected with him.

We bought from Doct^r Weston widdow the Tract up M Chunk Creek, necessary for us to enable us to make as we Supposed an unbroken plain from the Large coal bed to the River of 2 feet decend to 100 feet in length, but on bringing down the plain we discovered that the Fall in M Chunk Creek was too great for $2\frac{1}{2}$ miles of the lower end. J.W. & E.H. therfore was obliged to make a variation in the plain from 1 foot to about $4\frac{1}{2}$ ft in the 100 ft. The Plain of the Road is about as follows viz

$4\frac{1}{2}$ miles	2 ft to 100 ft
$\frac{3}{4}$ "	1.6 in "
$\frac{3}{4}$ "	1 - "
$2\frac{1}{2}$	$2\frac{1}{2}$ to $4\frac{1}{2}$ 100 ft

$8\frac{1}{2}$

$\frac{1}{2}$ into the mine on a decending plane of 6 in to 2 feet

J W & E H found the Settlers in M Chunk Valley Hospitable, being 2 Settlers one at a place Since called Sodom & the other Gomorrow, at the first place J. W. & E. H. were accomodated with the Liberty to Sleep on their blankets on the kitchen floor & the Good Host made up an exellent fire,—our bread perhaps was a little novelty in the Valley. Our Hosts family had nigh eat it all up by morning. However on the whole we had a good nights Rest & the folks were friendly & clever.

The next night then we slept at Gomorrow, in the Saw Mill loft here there was a shew of some panes or parts of pains of glass in the window, however on the whole the Room was well ventilated.

The 3rd day, bring^g down the levels, was a day of difficulty, as we then discovered that the bottom of Mauch Chunk Valley was too high, to continue our 2 feet plane further, after making a number of fruitless efforts to suit ourselves we gave it up for a few days, & Return'd again & finished it where it is now made. the ground was so cov^d with under brush & so stoney for 2½ miles of the lower end of M Chunk that we generally allow'd ourselves half a day to go it.

Concluded on the outlines for a Lehigh Navigation & 6th Month. Coal C^o. the substance was, a Capital of 50,000. to be Subscribed by individuals, for which those subscribers were to enjoy all that was made up to 25% on their Capital & we all the Residue, we to get \$1000 ea for conducting all the business & to have the sole management.

after the outlines of the C^o. was agreed we Printed a pamphlet entitled a Compendius Vew of the Lehigh & the Coal interest &c & set about getting Subscriptions. In this we were led to expect no difficulty as Hauto had agreed to get as much as we wanted &c &c, we found however he did not call on the monied characters he had proposed in the onset, as he avoided conversation about those characters & proposed his going to New York J. W. & E. H. apply^d to some of them for his character & then found Suffitient Reason for his not calling on them, as they new him better than we.

It must be Recollected that up to this time the sucess of our enterprise in our opinion depended on privacy & expedition, by this course of things the whole business was thus far Secured before we got to know our man.

J W & E H called on & wrote our terms to most of our monied men in Philad^a. among them was Stephen Girard & Jacob Ridgeway &c &c.

We went up to Burdowntown, & sought an interview with Jos Buonaparte. We Sent him a letter noting the outlines of our Vews, & asked a conference. The Count through his Secretary gave us a Respectfull Reply by a note, but declined joining us.

Sam^l Archer, on an application to him agreed to give us a hearing on the subject for 5 minutes by the watch.

Stephen Girard said he formed no partnerships.

Wm Abbett admitted our Representations to be plausible, after taking about a week to consider of it s^d that Jos Gillingham & others had a poor opinion of it.

Joshua Longstreth, appointed an evening for us to explain the subject to him. In the evening we call^d to see him but he was gone next door to a party to have sone fun (magnanimus interest thought I & worthy the man).

Sam^l Spackman, appointed 5 or 6 P. M. to call on him at his office. We attended & entered into our explanations, he was call'd off by a visitor, he propos'd call^s on J W 3 days after but he never call^d.

Samuel Lippincott, we explained our project, which he Readily understood & approved of, but his funds were locked up so that he could not change them, which he appeared to Regret.

Benjⁿ Stille, was polite en^o to allow of some general Remarks, but said he was unable to appretiate them.

John Stille, s^d politely, how do do Sirs, how do you come on with the Lehigh, & before we could give him an answer, he proceeded to Read his news paper, & alltho we bid him, good afternoon, he was so mutch engaged at Reading the chit,

chat, occurrences of the day, that he had no time to bid us good night.

Jacob Ridgway, had no opinion of navigation Stocks in this country, said he was going to vew his Western Lands &c, he could put out his money on better security &c upon the whole we conceived he treated the project & ourselves with much Contempt.

John Friese, says he has no money at his command.

Cha^s Roberts, admits fully the theory of our minutio, but is fully convinced, that in the aggregate Girrards fortune would not be addequate & strenuously advises us to sell out if possible, for any thing we can get, & if we can get nothing, be sure to give up the whole thing, or we will certainly Ruin ourselves.

Reuben Haines, call'd on him at his Home & found with him a dozen of his friends, Philosiphers Doctors &c he said he had no money, he had Stocks in sutch works which prooved total loss, & should not think of taking any of ours, he excused himself on acc^t of his friends, & forthwith had his Cows & Bulls brought up to shew his friends, on their good appearance he elogised about half an hour (without naming a single good property save their appearance, & that they came from Abroad, hence verify^g the character of children "that any home is better than their own", from thence he went to digging fish worms, evidence here, thinks I, of the Mind of a Man or a Boy.

Sam^l Mifflin, says that Schuylkill without any thing subscribed, would be worth more than Lehigh, with our improvements made, that after we get to the Delaware we can get no further.

Ab^m Hiliard, he s^d our calculation looked well on paper we had better do it ourselves, but the publick where like sheep, they mooved by giving them time, in a flock together.

Opinions of our friends rather who we called on for Subscriptions Retained to keep before me the opposite side of the subject. Jacob Cist wrote us that his Wilkesbarra friends there beleived we could not be in ernest in our Navigation we Replied, if they would come & see us, up to our waists working in the water, they would think it more Ernest than fun.

JW. told him we ment merely to inform our friends of the subject, that we were not asking favours, that if any favour was in the case, we conceived we we were yielding it to them as they never had such an offering before & not likely would again &c on the whole I considered him merely sporting on my Remarks &c &c.

John Rogers, Hoped we would do well, he would allways be glad to hear of our prospering, in all our undertakings. he did not pretend to know anything about such business. he did not see how we could Raise the \$50,000 &c &c

The above is a sample of the manner we were Rec^d on explaining our Project, & ask^g a subscription to a subject that we were persuaded the day would come that would verify our allegations & the imbicility of those who felt wise in opposing them. (The paper is worn off here and the last word is assumed.

Nathⁿ Sellars & family Subscr^d \$10,000 to the Stock, finding a difficulty in getting more on the faith of our declarations, we proposed that N. Sellars & his friend Sam^l Gibson should explore our Property which was agreed to, & we had every Reason to believe that he would give a favourable Report of the Good Land & in that case our stock would instantly fill. in this however we were disappointed, the Report was unfavourable; it was their opinion fr their Report the Road could only be made with a capital like Girards, the River was a more feasible property. on the whole they abandoned the concern. We accordingly surrendered their Subscription, we offered to chainge our comp^y to a Navigation C^o. only, & to make several very imporant alterations in the terms, but to no purpose, (we have lernt since, they had been aprised of the character of Hoto which was their Reason for break^g off from us.

Hauto done nothing in New York, & proposed going to Baltimore, (any wheres but among our Ritch Philad^a where he had agreed to Raise the cash)

endeav^r to get subscriptions to the Lehigh Navigation C^o. & finally John Stoddart, who was then a leading man among the Mound characters, being esteemed Luckey and to never mis'd in his Speculations, carried a strong influence with his actions, he being of an open and accessable habit, gave us frequent oppertunites with him, & his large Estates at the head of our Navigation authorized our beseag-
ing him, which we did frequently.

Jacob Shoemaker got information of the thing & he hav^e formerly an intention of forming a C^o. for a similar purpose up Lehigh, was prepared for the impulse we agreed to meet at the Life insurance Co. office on the subject, when for 20 shares of stock he agreed to give us his weight & influence to get our Stock subscribed, this was in the morn'g before their office hours, when J Stoddart arived, between the information from us & the influence of J Shoemaker, he agreed to take \$5000 absolutely & about \$5000 more on conditions of our Releiv^e him from the latter if he Required it. Cond^y Regued took also about same' am^t. & also Ja^s S Spencer. The Bal of the Stock was then fill'd in about 24 hours, & our Rever-
tionary interest valued at 100,000 Doll^s by the Stockholders, who pres'd us to make a Stock of it at that valuation.

Bought a Horse for \$100 & a small Dearbourn waggon for \$65, in which we Rode up to Laussain, but being Rather light it broke down twice before we arived, this was how-
ever the only light carriage we or the C^o. had untill the summer of 1822, when it was so farr Reduced by good service, that we sold it for the sum of \$5.

J W arived at Laussain, & boarded at the Tavern kept by Ab^m Clutz Wm Zain had been up about 1 mo before, getting out boat stuff &c

8 mo

Began our Work in the River with 13 hands at the mouth of Nesquehoning Creek, this Creek being the dividing point between the 2 Grand sections, viz.

9 mo

Had Rigid 2 scows 30 to 35 feet long by about 14 ft wide for Lodging & Eating Room of our hands about 70 in number

1 scow about 30 ft long 14 wide for Managers Count^ghouse Store House & their dwelling,

1 D " 25 ft long for Kitchen & Bake House

These 4 scows or boats were Rais'd 1 story say 6 ft & a cov^d with board Roofs.

In those boats we plased all our Hands, Stores Tools & Equipage & call'd the fleet Whitestown on Lehigh, (except'g 2 or 4 horses in the service for halling wood &c for the Oven & Kitchen) and as it was our designn to make the River navigable with small wing dams & channel walls, a Single Rift would not keep 100 hands perhaps more than 1 to 6 days, so that as we finished the work at one place we mooved down with our Floating Town to the vicinity of the next Job &c. we continued all Hands of us living in our floating Town untill we were Froze up in the Ice. Our Hands wasted our provisions, which subjected them to a general Reprimand, when those who were uncontinous of being guilty asked our consent to making a cob Law to aid us in checking that & numerous other impositions, among these Ordinances where the foll^s

"Any Hand that took more Victuals on his plate than he coul Eat, was t be cobed, he was also to be cobed for Running or going any way uncivel to his meals.

For any hand going into the Kitch without due liberty, & centinal was placed at the door as a guard to the cook &c &c.

While we boarded at Laussane, the Hands on First day (being a day of leisure) as usual must needs kill time with sport, as usual. a number of them got drunk & then quarrel'd, drove the Landlord out of his House broke his Windows &c &c Hauto untill then allways when he Rode out on Horseback had a pr of hosslers & Pistols on the saddle & shew'd a very Milatary defence, but on this occation was wise en° to keep those weapins out of sight.

The improvements Run^s through a Wilderness country the Hands came from all nations & Strangers to us. We concluded it most prudent to go Clad, in similar Garbs with our Hands. Each of us got a complete suit of Buckskin Cloths (Roundabout, vest coat, & Trou & having no fixt (being a moveable town) Habitation kept on hand but little cash & to our hands we agreed on taking them to pay allways in checks, which we directed the Banks not to pay unless Sign'd by at least two of us, (either two) so that if any of our wild hands caught either of us alone in the Wilds he had no inducement to waylay us, for money we were known to have none & Checks Required the Signature of two of the Managers.

The Managers never met with any molestation from the Hands, but when they were out in the country where they was unknown in their usual attire, they were vew'd Sometimes as Suspitious persons.

JW. & G F A H. Set off from the floating town in a small boat, for the City to form a Coal Company. We examined the River Lehigh & Delaware to tide.

1810
10 mo

At Yardlyville we arived in our Box Boat perhaps 6 ft wide & 10 or 12 ft long 1 foot deep, we took our valices to the Tavern. Hautos was old but a very shewy look^s one, & he carried in his hand a New Portfolio, (Red Morocca Cover), which look'd too fine to belong to such appearences in Dress as we made & perhaps not shaved for 3 or 4 days, our looks

in our Regular dress now was any thing but like that of Gentlemen. we had business 2 miles in the country & left our Box boat tyed at the shore & our Valices &c in the bar & set off this 2 miles. On our Return, our boat was taken to Jersey to detain us & they examined Hotos Valice expecting to detect in it some Robbery, but find^s nothing, & we scolding them, for their impudence, we got off but not without strong suspicions we were Robbers.

I then & since did not censure those people for Suspecting us, because of Hotos making a display of his finery, while he affected to be so perfectly independent & careless. Our dress was our usual M Chunk dress, Cap, Saylors Roundabout, vest & pants, & Redflanel shirt, all of course material, a dress that so effectually disguised us, that we seldom if ever was Recognized by our friends in Philad^a. unless we made ourselves known, so that I came home to the City & Returned incog.

Henry, Josiah White, Geo Frederick Augustus Hauto Erskine Hazard Brink, was the first male born at Mauch Chunk.

The first shew of fine arts in Sundry paintings was exposed to Vew, for 12 c ea in our Wheelwright shop at M Chunk in 11 mo 1823.

The first Preaching at a Public Meeting at Mauch Chunk was by Henry Clark a Baptist Minister in the Wheelwright Shop at M Chunk 3 mo 12, 1823.

Our first proposal was for a "Lehigh Navigation & Coal Mine C^o."

Capital Stock 200,000 divided in 200 shares.

White Hauto & Hazard each Reserve 50 shares for which they assignn to the C^o. all their interest in in the Law & Lease of the Coal lands.

The 50 shares Remaining shall be invested in the Navigation & Coal Mines & business connected therewith.

White H & H. pledge their 150 shares to the C^o. for the whole nett profits of the C^o. be exclusively appropriated to them untill they Receive 18 p C^t pr annum on the amount of their subscription. Our First Proposal

When the nett profits exceed \$9,000 or 18 p C^t the surplus to be divided equally on the shares of White H & H untill they Receive 18 p C^t interest p^r an^m.

And when the profits exceed \$36,000 pr an^m the profits to be divided equally on all the shares.

White H & H to manage & personally superintend the business untill the navigⁿ is completed & the Coal business Reduced to a system for which each of them to Receive \$1000 pr an^m—The C^o may associate a person with W H & H. at \$1000 compensation, a Majority of the Managers govern the affairs of the C^o.

Should \$50,000 be insufficient, additional shares shall be created, subject to the same Regulations as the 50 shares now subscribed for.

W H & H & the subscribers shall be at liberty to Subscribe the additional stock in the proportion to the original shares they may hold.

If any of the subscribers decline advancing their proportion to the New Stock, White H & H engage to make up the deficiency.

Each share entitled to one vote.

Dividends of the nett profits (Reserving a contingent fund to meet contingenes of the C^o) shall be made Semiannually.

On the above terms David Sellars & family Subscribed \$10,000 & a few other Subscriptions was made, but to Satisfy all parties & to ensure the Stock filling up, It was proposed that David Sellars & Samuel Gibson, should go up Lehigh &

to the Coal Mines to examine the whole & Report, their Views of the whole affair, & in 7th month 1818, they according Visited the property & made a boat & floated down the Lehigh & I believe the Delaware River also, so as to enable them to make a thorough Report.

D. Sellars & Gibson
unfavorable Report

They Reported the Coal Mines inexhaustible but that the country was so Ruff between the River and the Mines, that they found it an easement to Run over Stumps to avoid Stones!

That their Estimate of cost of improoving the River was within our Estimate.

Effect
of Report

This Report so completely alarmed the first subscribers, that we gave up their Subscription, & Nathⁿ Sellars Recommended that we seperate the Navigation from the Coal & make 2 Seperate C^{os}. which alltho contrary to our notions of Right we Submitted to, for the sake of start^{ing} the work under his Recommendation, for he felt a freedom to Recommend the Navigⁿ on our plan.

We accordingly issued proposuals for our Navigation, (without the Mines) viz

Capital Stock 1000 Shares of 50\$ each

First proposals for
a Navign Co. only

J White Hauto & Hazard assignn to _____ in trust for the C^o. all the benefits derived from the Navigⁿ of the River Lehigh granted to them their heirs & assigns viz the whole profits derived from the navigation in each year, shall belong to the Stockholders unless they exceed 25 p C^t & when- ever the profits exceeds 25 p C^t in any one year, the excess above 25 p C^t shall belong in equal proportions to J White Hoto & Hazard their heirs & assigns.

The Legal tolls composing the Revenue of the Navigⁿ shall never be Reduced without the express approbation in writing of the sd J White H & H their heirs & assigns.

J White Hoto & H, or the Survivors of them shall manage and direct the business, untill the Navigⁿ be completed, for which they each shall Receive \$rooo an^y, the C^o. may if they deem necessary appoint one to the 3 Managers to be associated with W H & H who shall have the same authority & devote the same attention & have the same salary as the other Managers.

A majority of the Managers shall govern the affairs of the C^o. after the Navigⁿ is completed, be business to be conducted by Six Managers, the C^o. to appoint 3 & W. H. & H. each appoint one.

At Meetings of the Stockholders each share shall be entitled to one vote, & the Interests of W H & H their Heirs & assigns may be Represented by a number of votes for each of them, equal to 1/3rd the votes of the Stockholders.

This stock was taken in about 2 weeks, mainly under the Influence of David Sellars, Condry Raguet, John Stoddard & Jacob Shoemaker, & on or about the 18 of the 8 month 1818 we arrived at Lausanne & commenced operations. We bought a Horse & Dearbourn for \$140 or 160, in which we went up.

We laid in stock of Camp furniture for perhaps 200 or 300 Hands, Composed of Sheet Iron Camp Kettles, Tin Cups, pewter dishes, Iron tinn^d spoons, & knives & forks, as the Roads were bad, that all would be light & nothing break & cost little.

We made scow boats & covered them in for our lodging & boarding, to pass down the River from Laussane, as we made our wings & channels, so that we allways had our Home, at our work.

Navign
Stock taken

	Hous
At this time there was occupied at Laussane	2
Between Laussane & Lehighton 6 miles (none at	
MChunk) Fogleman & Soultz,	2
Lehighton perhaps	4
Weissport—Weisses	2
At Big Creek mouth	2
Jn ^o D Bowman Henry B & Kelkners to Gap	3
At Gap	2
	—
	17

of these there was 3 stone, 6 Frame 8 Log Houses & distance
13 miles.

discover a Rout
along M Chunk
Creek for a Road

We proceeded on with the Channels to about the 10
Month & got down as low as Mauch Chunk & a number of
our freinds had been to see us, & the attention & economy
of our progress in the channels & we had examined the line for
a Road down Mauch Chunk Creek,—which was so covered
with naked stone &c that no path was made along the Creek
& we had not lernt it was passable before we examined it our-
selves, & then was able to shew its advantages in a verry
unexpected manner, for previously the difficulty was con-
sidered verry great to get a good Road to M. Chunk.

buy interfer-
ing track

W. H. & H. bought the M Chunk track on which, we
could make this Road, & 2 or 3 Coal Tracks which lay in &
adjoining the C^o. Coal tracts & all the land, not on s^d tracts
for 2 miles on each side of Lehigh adjoin^s M Chunk, to ensure
us the entire monopoly, & not to be interfered with after we
had opened the country.

Go to
Phila
to form
Coal Co

In the 10th. Month J White & Hauto went to Philadel-
phia to form the Coal C^o. so as to have the whole affair
posted up.

Our friends were greedy to take the Stock in the Coal C^o. & we gave 20 p^r C^t to the Stockholders in place of 25 p^r C^t as in the Navigⁿ & in other Respects essentially the same.

Coal Co.
easy
formed

We made a Stock of \$100,000 & a Subscription of \$55,000 as soon as our Conditions were written out. We Intending to Join the 2 C^{os}. the first good oppertunity.

We proceeded to make our Turnpike of 8½ miles as proposed, with a constant decent of 75 ft to 100 ft to the mile to within 4 miles of M C. & then 50 to 75 ft a mile untill the level struck Mauch Chunk Creek & then down the bottom of the valley, about 100 or 150 ft a mile to the landing at Mauch Chunk. No doubt this was the first uninterrupted decending grade of 8 miles in America if not in world, embracing the principle of never Rising.

begin
our graded
Road

In the Managers 1st Report dated Mauch Chunk 12 mo 31. 1818, they state that from the 19 Aug^t to 19 Nov they estimate they laid in the River 13,000 ft in length of Wall & containing upwards of 16,000 ft of Stone, overcoming the worst of the navigation in the lower Section & made it navigable in all seasons of common low water, & they expect to have it so far finished next season as to begin to collect tolls. & from the progress made by the Coal C^o. a large business may be expected in the River, as soon as the lower Section is finished.

1st Report of
Managers

That of the 15,000 Doll ^s Rec ^d they have expended viz	
for wages,	3,812.54
For accomodations, tools, provisions,	
Lumber &c,	7,755.26
Salaries of Managers,	1,500.—
Cash on hand,	1,932.20
	<hr/>
	\$15,000.00

In 1819, was a year of great perplexity but finally Crowned with Success.

1819

Discover
we have
not water
eno.

We early this season discovered that the natural flow of water in Lehigh, was insufficient to give us 18 in depth of water & 20 ft in width as Required by Law. by the water subsiding much below the mark we had made, on the best information we were able to procure from those on the River who professed to know all about it. & we had but one great experiment to make to give us water, by artifitial freshets, & if we fail'd in this our whole work must be exploded & abandoned.

Discover
the plan
of Bear Trap
Lock

I devoted myself for several weeks, especially to form a plan of a Sluice that would answer us, to be cheap made, & be safe in all stages of the water, & in which I providentially Succeeded in producing the Lock or Sluice, called the "Bear Trap", a name the Workman gave it, while we were experimenting with it, on M Chunk Creek above the head of lower Broadway, to elude the enquiry of persons, who teased them with wanting to know what we were making &c. &c.

We put up about 12 of these Locks & Dams this year, & completely proved them, so as to determine they would answer our purpose. I took out a Patent for this Lock 12 mo 1819.

Our Camp
boats gone

New
plan of
encampg

Our boats we used last summer & fall for ourselves & hands & whole camp, with mooved down as our work progressed having gone off with the Winters Ice & freshets, we changed our plan by procuring $\frac{3}{4}$ in boards 15 or 16 ft long which we battoned together & broke joints, Making a Battow about 6 ft wide by their length, of these we put as many together of Tent form as would accommodate 40 to 60 hands, being the number we allotted to erect a Bear trap lock & Dam in 40 to 60 days, & when the Job was done they, the hands took them down, (4 men to a battow) & made a Raft of them to carry down their camp equipage. in this way, we could Reerect accomodations for a comp^y of hands of 40 to 60 in about one hour, handy to their work on the River Shore as

well as save a Team to cart the furniture &c. Our improvements this year extended to the Lehigh Gap. As we lived with the Hands 200 or 300, nearly all of whom were entire strangers to us, we adopted the plan of Dress, most befitting our Hands, viz Red flannel shirts, Round about over coats & Caps & strong shoes with holes cut in the toe to let out the water, as our work was generally in the water 7 to 8 months in the year, & my portion of it to lay out the Walls & Channels in the River by piles of Stone as marks &c. The first 2 or 3 years we had no fether Bed or matras on our Work, the Managers as well as all Hand slept in Bunks, of unplained pine Boards, & Blankets, some had Straw & others the plain board, to sleep on. I left my Gold watch chain at home & substituted it with a leather shoe string And to prevent or discourage attacks on us for money, we paid our hands in 1- 2- 3 & 5 Dollar printed checks on Allentown Bank mainly that being the nearest to our work. & these checks was sighned by 2 of us to prevent their one of us by himself & coercing us to sighn checks. So that our Clothing of coarse Cloth or Buckskin tanned in oil to allow our going in the water and dry on us &c. presented no object for attack, & nothing valuable was seen about us & we professed to carry no money about us & we never was personally molested.

Care to avoid
personal Risques

I was in the water in Summer perhaps as much as out of it for about 3 seasons & my cloths dried on my back, except they were wet in the even^g & then I put dry cloths on. After going in the water I kep up my circulation by walking about my business &c &c & never took cold but once & then after wading across Lehigh & Returning on a very warm day, I was tired set down in the cool shade to Rest & this gave me a severe cold which settled in my face which nearly overcome me, & was laid up several weeks.

Exposure in
water

\$50000
eno on
original plan

We believe from our Experience that the \$50,000 subscribed for the Navigation would have been sufficient to have made a Channel Navigation as at first intended, & which we should have adhered to. If our water had been Sufficient without artificial freshets, as we were taught to believe it was ample by the most informed persons we met on the Lehigh.

Water failing

But the water failing we were Required to Resort to Dams &c for artificial freshets, & to make a more perfect job in a future year for our Coal we made a Dam at the Slates & 37 miles below M Chunk which alone cost about \$40,000.

1819

This year 1819 we fully proved by our Artificial Navigⁿ the ability to make a Regular Navigation, by which we could send coal en^o to market & send it Regular to prove whether the market would take such a quantity as would justify a better than a mere descending navigation by Slack water Canals, Locks &c. or whether we so limited in Sales as to confine us allways to the present Descending navigation, & to meet this Contingency we bought on a Credit of several years (for we had no money to spare excepting what we could spare out of our salaries of \$2,000 a yr to each for Managing both Coal & Navigation Cos.)

Buy Lumber-
Land &c

Why Have eno
Lumber

Our plan was & which we effected, was to buy en^o Lumber land (say about acres) to answer our purpose forever, for a descending navigation, if the market would not take much Coal, & all was yet to be tried, & if the market took a large quantity of coal, as we hoped it would & that it would increase gradually, altho this might take all our Lumber in time, it would last untill we could make the ascending navigⁿ & then we should not Require it, or much of it. So that whether we Succeed^d or not in sell^g coal largely, we thus provided an full supply of Lumber- for a failure

in the supply of Lumber, would have been as fatal to us, as a failure in the Coal mines.

In the purchase of these Lands however, I Run the principal Risque, for my partners Had no means, one E.H. lost all the Estate his Father gave him at the falls, & Hauto prooved an imposter & never had anything, that we heard of (to Rely on). My Property was at the Falls of Schuylkill, which might or might not sell. The City I knew needed it to Raise water to Fair Mount, to supply it with Schuylkill water in the place of their Expensive Steam Engines, & they had Refused to buy of us & the Navigation C^o. had Refused to let us moove our Dam to supply the City with water. I could do no more than to Inform the Public, of the great value & savings of this Water Power of mine & J. Gil^m at the falls of Schuylkill, & the Great loss they sustained by not procuring it, & let the Public Rest under the burthen of their Condition.

My
Risque

Hoto an
imposter

Inform the Public of
great savg to City
by Water Power

I wrote a number of pieces & answered them on this subject. I gave a History of the Cost to the City allReady of supply^e them with water making it amount to up to 8 mo 1818 \$1,388,665 which the Aurora published & Poulson Refused.

& one time coming to the City to see my family there fell a shower (in a dry time) of about one inch in depth, which was verry Refreshing to the Citizens, I took advantage of it & Published the next day that the City by Resorting to the Water Power at the Falls could make an Artifitial Shower all over the City Streets, every day, if the Choose by Resorting to this cheap & abundant power &c &c.

tell them
Could make
artifitial Rain

And by Deed of 7 April 1819 the Councils of the City bought my & J. G. property at the Falls, for \$150,000, of which 9/16th was mine & 7/16 J Gillinghams, & with this I was able to pay off all my Debts & en^o left to make me

Sell Falls
to Phila

whole, together with a moderate salary for the 7 years labour there. & J Gillingham also saved himself & a few thousand Dollars profit.

Saved
myself
in sale

Had I Realized this sale of the Falls of Schuylkill before I had made my engagements up the Lehigh I have no doubt, nothing however promising there could have induced me to begin & prossicute that Work. I would then as I did when I quit the Hardware business in 1808, felt that I had en^o of this Worlds goods, & would have felt it my place to have enjoy^d it free from all necessarily Personal labour in the most discreet manner under a kind Providence that he would allow me to do. I then was blessed with a beloved Wife & Children & should now have felt having escaped a Sea of trouble, by getting through with my scrape at the Falls, & that I had exposed myself en^o, to now enjoy life with thankfulness with my family, in the most Rational way Kind Providence would permit me, & permit us to do. But Providence ordered it otherwise, as I was completely engrafted in the great & extensive engagements on the Lehigh long say about a year before, I sold at the Falls, & Here the Plans & Most of their practical carrying out was Mine, as well as all the monied Responsibility, which was considerable in the purchase of lands &c. exceeding \$23,000. The Scribbing &c Erskine & the perverse & Hiprocrital impositions was Hautos, instead of the Capital he was to Raise. Hence it would be Ruenous to my engagements here as well as injurious to the interest of those who had Confided in us by their subscription. So as to have made it dishonorable in me to leave the concern, untill it was completed agreeable to expectations, or as near as we were able to make them.

Reflections

Success
of our
Plans

Late in the Fall of this year 1819 we had the Satisfaction to practically proove our System of Artifitial freshets would completely answer. But here again we had to encounter

another Dilemma as by the close of this year, we had disbursed the whole of our Capital Stock of \$105,000, & a number of our Dams were not covered in & the Locks not Sufficiently protected against the Ice freshets of Winter for want of Hands en°, and as ours was the first effort in Penns^a to employ so great a number of Hands in a Wilderness, it was impossible to tell how we could succeed in getting hands, untill we made the tryal, & to not put up en° of our work to proove its principle this fall would have been fatal against getting any more capital to finish it, to do this we had to spread our work over a suffitient line for the experiment & Risque, the early part of winter being mild en° to perfectly enclose or cover the work, against Ice freshets.

Through
our
Capital

Notwithstanding we had spent all our Capital, It would have been Ruenous, to have broken up & disbanded all our Hands & this would have confirmed the Public in what they had predicted of another failure in us!! We therefore kept as few Hands through the winter of 1819-20 as we could well do with & I supplied the necessary funds, through winter & untill we got another subscription, & the public knew nothing of our pecuniary difficulties.

I supply Hands
during winter

The work being tried & fully answering our expectations, as the cap stone to giving us an ample Supply of water, without which our work would have been a total failure, elevated Hauto so much that He concluded on a visit to Harrisburg, to evince to our Ledgeslature, how well they had hit it, in giving 71 miles of the River Lehigh & a fall of our 1200 feet in fee simple to him & his companions for improovement in which there had been so many futile attempts before us.

1820

Hoto goes
to Harrisbg

He equiped himself in our Regular Court suit, viz a complete suit of Leather (Buckskin, tann'd in oil) say Round about, vest, & pataloons: Red flannel shirt a large Fox skin Cap, with the foxtail sticking out behind, & with much per-

swartion he gave out taking a large pair of Fishermans Boots, thus equip'd (on a Good Horse) he vow'd himself the leader of the 3 great "Lehigh putzers" & as he had made the members when we got the Law 2 winters before believe that He was worth \$500,000 in his German Estate, he now was carry^g out the proof of it, by the Successfull prosecution of our great work. His strange appearance brought out the children in crowds after him as he passed some of the towns calling him the "Bellsnakle" to get clear of these & still more excite their wonder He Rode up to a Cake house & bough out the whole stock of cakes & came out & Sew'd them as the farmer sews grain among the children When they all exclaimed it was the "Good Bellsnakle." This was Hotos tack & glory perfectly & he could shew himself out to the Dutch Ledges-lature & to children to excite wonder perhaps as well as any man.

But for any practicable use to our Great work he was not only of no use but of great disuse, as he helped the cause nothing except to injure our Credit, which was exceedingly ticklish, especially at this time. His carousal & foolish displays at Harrisburg was however of short duration. An Ice freshet soon came & carr^d off 6 of our Small Dams & locks that had not been covered in, in the preceding fall.

But this great Calamity, as appear'd to the Public & especially to Hauto, frightened him exceedingly, but it confirmed most completely the other 2 Managers, that the principle we had adopted for making Dams & Locks secure against Water & Ice freshets was a perfect one, & that it was now in our power to make Dams & Locks in the Lehigh entirely safe. & which loss was of much more value to us, than the winters passing over without harm, to our works. Nothing went off that was covered in, and the bottom logs 18 in to 24 in di^a which extended 6 or 10 ft below the dams to Receive a lower

Ice Freshet
& Dams
&c break

slope, mostly broke or was worn off by the Ice pich^e on them. But what was of most value, this calamity enabled us to get Rid of Hauto, which If we could not effect I had made up my mind to leave the concern, however much I should loose by this course. I was with my family in Philad^a. at the time, Erskine only was on the Lehigh, & he informed Hoto & myself of the disaster. I went up at once, & as I passed up from the Lehi Gap to which our Dams &c had extended, I examined & noted down all the Damages &c &c, so that I had all posted up when I got to M Chunk or Northern liberties, there being no house at M Chunk, & we Resolved to make use of the Disaster to dispose of Hoto. He at once Returned from Harrisburg, & on ariving at M Chunk, instead of examening the work to see what Damage was done, He moped about as one in great distress, for about a week & did not to my knowledge examine a single breach

I examine
Damages

Hoto
Returns

After giving him a weeks time to examine the work & breaches for himself, I told him, that as we was out of money, & so much of our works destroy^d, we should not be able to procure more money, while He continued connected in the C^o. And proposed He should at once go to Germany & procure the needfull credentials, to satisfy us he was not impos^e on us by his declaring to us he had an Estate there of 300,000 to 500,000, which he could controul by going there. I proposed he should at once leave the Board (or I would) go to Germany & make this proof. We 2 would take care of the Lehigh &c in his absence without Charge to him & on his Return with the proofs Satisfactory to us, we would not ask him to put any of it in the Lehigh. he might then Resume his present position in the Board & the public would also see with us that he was an Honest & honerable Man, & all would be well.

I propose
Hotos going
to Germany

He declined going pleading he would never go as a Poor man. I concluded at once as I had fear'd so much before

buy
Hoto
out

that he was an imposter. I asked him how he could impose himself so on me with a young family, his Reply was he had a Right to do the best he could for his own interest, or words to this purport. We were perhaps a day making a bargain. I proposed going out & give him up the concern, He Replied I cant manage it & you must, finally I told him we would give him $\frac{1}{2}$ cent a bushell on all the coal sent to market by the present Lehigh Coal Co. & \$3000 cash for the whole of his claim on it, & the property we had bought together; & if he did not comply at once I would give judgment & sell us all out for the amount I was then in advance for the Comp^y for the Winters expenses. this brought him to, & we made a written agreement accordingly on the 7 march 1820.

His
Character

Thus we got clear of a man, who by an extraordinary course of action had imposed on us, as well as most of his acquaintance. He was a litterary man, understood 6 languages with talents for intreague, so much that he entirely got the blind side of us, Had excellent conversational Powers, could make out his tales as he went along without any truth. He appeared like a plain plodding industrious man & fond of mechanics, E. Hazards family had known him a number of years. He imposed on John & Cha^s Wistar of Germantown \$6000, which he borrowed of them, to carry on a great sulphor business at the Virginia Coal Mines, by his good address, & fool'd it all away in Germantown &c without, makeing any effort to begin those works.

He had the nack of keeping in the good graces of many of our wealthy families in Phil^a. from whom he also borrowed money.

He had the power of ingratiating himself so much, that he lived — years with M. Ritter in Germantown without paying his board.

Abeel Abbott who had the charge of Running our first Boats down Lehigh, on Returning by Germantown, put up at Ritters, & on the Landady find^g they were from M Chunk asked if they knew Hauto, & find^g it was he that was engaged in those works, s^d she allways thought Hauto was an honest man & would pay her for his boarding wen able that he had boarded with her a great while & had not paid her. This alarmed Abeel & C^o. as they had been made believe by Hoto, that he was the great Capitalist for carry^g on the Lehigh, who they now found had not cleared his own teeth.

This adventure like to have broke us up, but as we allways paid on demand all claims on us they continued with us, but concluded to be prudent & kept their accounts cosely paid up.

Hauto had got so much in the practice of stateing as facts, without Relation to truth, that, he discovered an impossibility to tell the Truth! & if he was sent out on business along the River had the prudence of taking a favourite Irishman with him to Report for him the facts, as he could not Rely on himself.

Of all our troubles, Hoto was the heaviest load we then carried. I am thus particular not to injure the character of a fellow, man, now no more, as some appoligy is due for associating with such a character, as he turned out to be, for untill he got into us with our Law &c, he appeared to us just the man we could desire for our novel enterprise. Hauto cost the C^o. about \$40,000, the 11 or 12000 acres of coal lands about 25 to 30,000.

The whole of Hautos claims has since been bought by the Lehigh C.&N.C^o. who have also bought the Fee simple in all the Old C^{os}. Coal lands by buying out their stock.

Our next great job was to Raise more money as we had spent all the C^{os}. Capital, but here was a difficulty, as the

Efforts
to Raise
Money

work in, to, to, was experimental & thus far the Capital was gone, that, was to have completed it, & nearly 1/3rd of all our Dams broken by the Ice freshet, prooving thus far, that we were taking the same Road to Ruin of all our predecessors.

As I have mentioned we had formed 2, Companies, viz a Navigation & a Coal C°. & both C°. censured us their Managers for spending their Money Wastefully. The Navigation C°. charged us for spending it wastefully by spending it so fast, by hurrying it, to accomodate the Coal C°. And the latter C°. complained because the Navigation was not then entirely finished, so as to send down their coal &c. &c.

Most of the Stockholders in one were Stockholders of the other C°. & we found they took sides, with the stock their interest preponderated, if it was only 200 or 300\$.

One influential Stockholder said he would be one of 10 to Subscribe \$10,000 to finish the work & proove the value of the Coal &c if the C°. would mortgage, to them the whole of their property. But few join^d him & not en°.

It was finally concluded to amalgamate the 2 C°. which was done 21 April 1820, on the express condition that \$20,000 of the Stock should be subscribed to & the new Stock called "the Lehigh Navigation & Coal C°."

This small increase of stock was with Difficulty obtained & not untill \$12,000, of it was taken by White & Hazard. More than \$6000 of it I had advanced to carry us through the winter.

This year, 1820, the Dams & Locks were Repaired & the first anthracite Coal sent to market by Our Artiftial Navigation, & the whole quantity sent this year was 364 tons & this prooved more than en° for family supply in Philad^a. & the C°. was in debt to the Rollen Mills &c for taking of this Stock alltho the C°. never asked more that \$8.40 a gross ton whereas the previous C°. to ours asked as much as they could

Managers
Censured

Offer
to loan
\$10,000

the 2 Cos
amalgamated

New
sub-
scriptions

1820
First
Coal
Goes to
Market

get for it, & they got \$21, a ton, the consequence was the Public would not put up furnaces to burn it at such extravagant price, as \$21. This seemed to confirm the doubtfull in the beginning, who admitted we had plenty of Coal, but that the prejudice of the Community, would be against its family use, & which apprehension seemed now to be confirmed.

Difficulty
in selling

during this season of 1820 we again got through the funds of the C^o. again & I loaned the C^o. for all deficeines untill further Stock was subscribed, & which was not till the 1st May following.

The difficulties to sell more Stock seemed to increase. Our capital had been enlarged up to \$125,000, the Citizens of Pa. did not incline to favour the introduction of our Coal in families, & many of our stock holders said our money was all threwn away, for, if we finally made the River navigable & works safe & which they much doubted, the community would not burn our Coal, & it was not believed that all the other articles using the navigation would be & a new difficulty on the River had presented. at the place call'd the Slates, where Slate Ridges Run across the River, where it was 400 or more feet in width with a general level top except^s full of small breakes throu the Ledges. Over which we had carried our Channels. But it was found the wing walls being so lengthy through the slate Ridge they would not hold water en^o in the channels so that the cheapest improvement was in the opinion of the Managers a Large Dam, which they estimated could not be completed for less than \$20,000.

New
difficulties

The difficulty of Raising a further subscription was so great as not to be effected before 1 May 1821, & then under the foll^s extraordinary circumstances that \$50,000 more was subscribed, viz.

1821

All the old subscribers agreed that the subscription to the \$50,000 which was called new stock should in future draw

New
subscript
ion of
\$50.000

all the income or profit of the C^o. untill they got 3 p C^t semi-annual dividend & then the balance of the profit went to the old stockholders untill they also Rec^d the same, and the stock to allways continue this way untill there was a profit en^o to pay all a 3 p C^t semianual dividend & thence the stocks to be equal &c &c

The stock subscribed as above mentioned was \$125,000. White & Hazard, contended that their Reversionary Interest was worth fully this sum. It was in the following Items, viz:

1 They had all the profits from Tolls & Coal exceed^g 20 p C^t.

2nd. They had all the Water power under the Law as they only gave the 1st 20 p C^t of tolls &c to the C^o.

3 They Had the Whole of the Lumber Land which was as necessary to the C^o. as the coal, for without this Lumber, the Coal could not be got to market & it took for the arks at least 500 ft board measure for ea Ton of coal.

4 White & Hazard owned all of M Chunk Track not necessary to the Navigⁿ.

All the Kettle track 1½ miles along the River Shore opposite Mauch Chunk.

The Track which the Hotel is on.

500 acres Coal land, up Room Run, "Elizabeth Weiss,"

50 " Do in Painter Creek Valley & lower Saw Mill,

400 " Dunn & Weinder track,

About Half of the old Coal Mine Shares which J. White bought, & could have bought nearly the whole stock.

White & Hazard proposed to put all this in at what it cost them to the Stock of the C^o. at the same as the Stock of the C^o. had been in advance for viz \$125,000 The C^o s^d it was worth nothing, as the whole was a failure. I Reply'd it would

be a failure if no more was subscribed, but if they succeeded then ours would be of equal value to theirs. However I told them, we wanted nothing more than it was worth & if they would make our Stock £150,000 instead of 125,000, we would agree to let them Receive the first 3 p C^t semianual dividend & then we Receive up to 3 p C^t & when all got 3 p C^t, all should be equal from that time. & in this way it was fixt & our whole Interest amalgamated & invested in the Reversionary stock of the 3rd. grade & this Stock was equalized in 1826.

And in addition White & Hazard gave a bonus of their Reversionary Stock of \$10,000 to the new subscribers.

White & H
give
\$10000
bonus

On obtaining this subscription the Slate dam was immediately commenced, but before it was entirely finished a large freshet occurred & carried part of it away.

Break at
State Dam

It was believed at the close of this year that as our Work was still an experiment, both as to effecting the navigation & making it permanent & that the market for tak^e coal sufficient to endemniy us for our disbursements was still doubtful, for altho we ship^d down this year 1073 tons, still the consumption in families in P^a. &c was insufficient to take this small quantity but the balance we sold to factores.

2d Year
shipped
over
1073 tons

Therefore the Managers was of the unanimous opinion that more money could not be Raised for the C^o. as all the C^{os}. property was pledged to the last subscription of the \$50,000 & the C^o. had no new security to offer unless they obtained a charter of incorporation, so as to Risque no more than the stock any individual might subscribe.

The C^o. obtained a charter of incorporation 13th. Feb. 1822.

1822
Co gets a
Charter

In the years 1822-23 we perfected our decending navigation in the Lehigh & Contributed about 4 or 5000 Doll^s. to improve the channel of the Delaware River.

1822-23 Co
Improves
Delaware River

About this time we contrived the present plan of Scales with the Dish Resting on 4 knife edge fulcrums & compound Lever of knife edge fulcrum for weighing our Coal waggons, the old plan being much too tedious. this plan of Scales has since obtained general use, from small scales up to weighing Loaded Boats.

Inasmuch as by our decending navigation we got but one trip out of our boats when they where knocked up & converted again into Lumber after discharging their Coal in Philad^a. we found it was impossible to continue our Coal business even in the then small way, unless we, clear^d out and contracted the channel as high up the River as the Pine Forrests, which was about 14 miles above Nesquhoning Creek (16 miles above M Chunk)

This however was no small job for it was to be effected over Rapids that had formerly been abandoned, as a work impossible to accomplish; in this 14 miles there was a fall or Rise in the River exceeding 300 ft. & the Rocky bottom was peculiarly hard & difficult, & so forbidding was the shore that Horses had never been got down to this section of the River except in two places. & to supply our Hands in the channel, it was necessary to begin at the up^r end and work downwards & send provisions & supplies to our Hands by a Road about 18 miles Round to the mouth of Laurel Run & then put it on a box boat & go down the chan^s to the work men.

No Raft had ever before our channel was done Passed down the River from above the Nesquhoning, & from Nesquho^s down before our channel was made it was only navigable for Rafts, in time of High freshets.

The Managers attempted to get plank for their boats down from the Forrest to M Chunk before the channels were

made, but the tryal proved that the plank wore out or got broke against the Rocks before they got down to MChunk.

Their next Resort was to throw in saw Logs singly in the Forrest, drive them down in high freshet by push^g them off the Rocks when they got fast, but it frequently happened when they got a large quantity within a small distance of MChunk, a high freshet would occur & sweep the greater part down the River beyond our controul, in fact we lost so much Logs & Lumber by freshets that, when the C^o. were about settling Damages for their Canal The owners of places where this stuff of the C^o drifted demanded Damaged 4 fold the value of their Land because of the value of our drift stuff & on a Reference to one of those cases, our man swore that the Plaintiff in question had supported his whole family by the Drift lumber on his land (about 1 or 2 acres) & had money over their support.

In the years 1822 & 1823, besides finish^g the channel below M.Chunk we made the channels up to the Pine forrest.

Make
Channels to
Pine Forrest

In 10 July 1823 our decending navigation on the lower Grand Section was Reported completed according to Law & the Commission appointed by the Govenor to make the examination in Sept^r 17 1823 the Governor issued his warrant to take toll according to Law.

Decendg
Navign
Completed

No toll was charged by the C^o untill the year 1827, being 3½ years, that the C^o. was authorized to charge toll, without charging one cent. The Beaver Meadow Coal alltho a Rival was admitted & did pass considerable quantities down in 1825 & 1826, without a charge of one cent of toll, and all the Pine forrest above MChunk would have been Locked up from public use to this hour, had not the River been improved & up to this hour the C^o. have not charged one cent of toll on the up secⁿ alltho the public has had the Regular use of it for Nine years, being a distance of about 14 miles.

No toll
Charged

1823

In the year 1823 there was 5,823 tons of Coal sent down the Lehigh & about 1000 tons of it was left on hand & unsold in the follow^g spring, & there still continued a disinclination to use it much in families & folks in passing by our Coal wharf constantly told us we had over stocked the market.

1824

Philada
Managers
object to sendg
over 3.000 tons
but we sent
9541 tons

Early in the summer of 1824 the Managers f^m Philad^a visited M Chunk when a meeting was held to consider how much Coal the C^o would be safe in send^g to Philad^a when the Managers f^m Philad^a were unanimous in the opinion that 2 to 3000 tons was en^o to send down, which with the stock on hand at the close of the past Spring would be an ample supply? they therefore desired the Acting Managers at MChunk to limit their business to that quantity; in this however the MChunk Managers dif^d in opinion but they were permitted to have their own way; & they sent down this year the enormous quantity as was then supposed of 9,541 tons, which large stock produced no inconsiderable alarm among the parties interested in Philad^a. it became proverbial this quantity would not half be sold. This however turned out the most fortunate occurrence, to our C^o & to the future prospects of the Anthracite coal business, for the public now seeing so large a stock on hand our price a uniform one of 8.40 Dolls a Gross ton, began more generally to inquire about it, as a domestic article that the supply of it seemed to be now ample, & likely to be continued as a full supply, for small stocks had been left on hand in the spring for the 2 preceding years, & now the stock was deemed extremely large, being 3 times the quantity supposed to have ever been sold in Philad^a. of the Bituminous Coal in one year. Stove makers & Grate sellers now, (the Winter of 1824 & 25) for the first began to boast of having preferable Patterns of Grates & Stoves for burning Anthracite Coal. Some patriotic Ladies also began their sample fires of Anthracite Coal: among them the Widow Guest in Sansom

& saved
the Co

St stood the most conspicuous, and of the Grate Sellers Jacob F. Walters took quite a leading part & several others not recollected.

This Winter 1824 & 25, may be considered the turning point in the use of Anthracite Coal, & made the C°. begin to think the Coal business would grow fast enough to Require making an ascending Navigation, but here again was a difficulty, there were several grade of preferences in the stock & which required a 3 per cent dividend out of the net profits of the C° on all the grades to produce an equality which the present business was not sufficient for.

1824
1825

The C° sent to market 28,393 tons & the Schuylkill began & sent 7,143 tons. It was not till January 1826 that this desirable event of equalizing the Stock took place. In 1826 the Co. sent 31,280 tons of Coal to market.

1825
1826

In 1827 the C° made their Rail Road of 9 miles in length it being the first Rail Road (exceeding a mile in length,) ever made in Penns^a. They began this Road in January & finished it so as to regularly pass down Coal in May following. This year, the C°. sent to market 32,074 tons. the Road being decending for 8 miles to M. C. The mules, which drew the Coal Cars up grade, Rode down grade, & thus performed daily trips of 40 miles.

1827

In 1827 the balance of the stock was subscribed viz 500,000 dolls, but not without the greatest difficulty. The Books were open one week or more for that purpose, a general expose of the Coal business, present & prospective was given by the C^{os} engineers & subscription was headed by one of the Managers (JWhite) for 50,000 dolls. & by several others for large amounts, & notwithstanding it was strongly apprehended, & by many discreet folks predicted it would not sell, we however succeeded but not without the greatest exertions on the part of the Managers &c.

In the Spring of 1827 it was finally concluded we were strong enough to begin & prosecute the ascending Navigatⁿ. for the prosecution of that great undertaking the C^o. employ'd Canvass White Esq. as the principal Engineer, he having established a practical character for that profession equal to any in our country; our next difficult point to decide, was the size of the Navigation, whether it should be for boats carrying a burthen of 25 tons, or for a greater burthen. Most of the Engineers who had written on the subject in England & America, recommended the 25 ton Navigation, & the Acting Managers White & Hazard at M. Chunk, contended for a Navigation sufficient for boats of 130 to 150 tons burthen: they contended that as the Lehigh & Delaware afforded a plenty of water for a Navigation of the largest class, it would be Suicide to permanently deprive the C^o. & the public of the very best application of all the means Nature had afforded them as a debt due their C^o. & also due the Public; & particularly so, as our C^o. had Coal enough to supply the U. States; & in our case as Coal would be, by far the greatest article carried on the Canal, untill we connected with Susq^a, so that no boat need ever descend to Philad^a with less than a full load, let the burthen be ever so great; for any balance of a load could be made in Coal, without materially detaining the boat to procure her lading, & that a large Boat would require but the same Crew, as a small boat & consequently every ton transported on the Canal, throughout time, might be carried cheaper for this arrangement. The debate was carried on for nearly one day & finally decided as has been since carried into effect, by making the Locks conform to the size of the Delaware & Chesapeake Canal, 22 ft wide, 100 ft long, & 5 ft depth of water, & the width of Canal at bottom is 45 feet.

The Lehigh Canal was begun under the care of Canvass White about midsummer 1827 & in the Fall of the same year

the Delaware division of the Penns^a. Canal was also begun; so that it was but reasonable to suppose those respective works would be finished on or about the same time & thus one would aid the other. the Lehigh Canal & Locks are double the size of the Delaware Canal & Lockage, more than twice as great say as 360 ft is to 166 ft Lockage.

The Delaware Canal is however 60 miles long, & the Lehigh, to Mauch Chunk 46 miles in length. The Lehigh Canal was opened for Navigation on the 26th. day of June, 1829; and the Delaware Canal is not yet navigable (Feb^y. 1832), hence the Lehigh C^o. and the Public have been deprived of the use of the Lehigh Canal, & the Delaware Canal 2½ years, to the great loss of all parties, but more particularly heavy on the Lehigh C^o.

The Commissioners appointed in due course by the Governor, 26th. June 1829, made their examinations of the works on the Lehigh; & reported them complete according to Law, as high as M Chunk July 3rd. 1829 And on 8th. July 1829 the Governor granted authority to charge Tolls according to Law. And on the 20th. August 1829, the Managers decided on a Tariff of Tolls to be paid on the Lehigh, to commence on the 24th. of the same m^o.

This rate of Tolls where of course copied after those on the Schuylkill, as that was the only C^o. in the State, in receipt of Tolls on Canal Navigation, & intended to be the same as theirs, & giving the Public the advantage of a larger Canal, excepting in the article of Anthracite Coal, which article, then interested no one, as none were sending coal but ourselves, on account of the great land carriage our back neighbours were subject to: & moreover this could be revised at any time, when the Legislature made a Law, barring the State from taking advantage of the reduction in the event of their purchasing the Navigation, or rescinding their right to pur-

chase. Thus far the C^o. has received no dividend, since they made their Canal, & their stock could have been bought ever since the Canal was made, from 90 to 105 p^r c^t for 100 paid, so that if the C^o. had great advantages, citizens who wished to possess them, & go into the Coal trade, have had the opportunity to buy the Stock at more than 25 p^rc^t less than it cost the Stockholders. The original Stockholders have lost in the interest account upwards of 40 p^r c^t, after deducting the dividends, and the last subscribers have lost 18 p^r c^t as no dividend has been made the last 3 years, owing to the expense of making our Canal, & to the procrastinated finish of the Delaware Canal.

effect of
Peace
principles
of the Co

The C^o. spent in their improvements & current Coal business upwards of 1,700,000 Doll^s, at M. Chunk, before they had any contention with any one to cause a resort to a Court of Justice, which they presume will be admitted, as testimony of a strong kind, that they have been both liberal & peaceable, in the management of their extensive concerns. The C^o. have up to this date (Feb. 1832) disbursed at M.Chunk, in their improving, & current Coal business, exceeding the sum of \$3½ millions, which was circulated in their own County of Northampton, & the Counties adjoining, which large sum was paid mainly for Hands, wages & provisions: & consequently the whole country has been benefited. The current disburs^s on coal this year (1832) is expected to exceed \$300,000, nearly all which is diffused through Northampton & the adjoining counties. The business is greatly on the increase, & all this work in a barren country. There are now 526 subscribers to the Co^s. Stock & Loan, & allowing 6 persons to each makes 3156 souls directly interested in the affairs of the Company. These are all or mostly all American citizens, composed of Rich & Poor, the Widdows & the Orphans, & added to these is upwards of 500 workmen, in the daily employment of the

C°. throughout the season of business, & this year (1832) is but the beginning of a navigation by Canal to tide; their business is expected to increase several fold, & so the employment for Hands.

Say Loan & Stockholders & families to be	3,156 souls,
at M Chunk &c	1,500,
	<hr/>
	4,656
The money the above spends supports an	
equal number	4,656
	<hr/>
Total souls now supported by the works of the C°	9,312
	<hr/>

The C° have always declared they were in the pursuit of a practical work, & which it is presumed their History fully proves. They feel they have fulfilled the conditions of their Law in Good faith, & that on the whole they have performed their duty, which if not the most arduous of the kind in the History of their country, it has been enough so, & that as the Pioneer, in introducing one of the greatest staples Penns^a can boast of (Anthracite Coal,) making the best Canal as well as the first Rail Road in the State, & introduced into usefulness the cheap plan of making a navigation by artificial freshets. In the upper Secⁿ 2 dams are made to supply an artificial fresh a distance of 12 miles, & a fall of 336 ft, that they are entitled at least to the equal protection of Law, in common with their fellow citizens, & they dont think it their interest, or the public interest, for them or for any to have more, even if common honesty would bear out another course, but which they very much doubt. (these last Remarks are made as a disposition in our Legislature at this time 1832 was evinced to encourage the Beaver Meadow C°. & other interests in the 2nd Coal Region to persecute us, & break us down if in their power)

As the artifitial freshet Navigⁿ is now abandoned & substituted by a Canal & Slackwater, It is due to give the character of that Navigⁿ.

The River had 12 small dams & Bear trap Locks of 3 to 6 ft high from M Chunk to the Lehigh Water Gap, say 11 miles & 9 miles below at the Slates a large dam & Bear trap lock 130 ft long 30 ft wide, made for a lift lock & 17 miles below the Slates another Dam 6 or 7 ft high & accend^e lock like that at the Slates.

1 man got on the front Coal ark at MChunk & Rode down to the 2nd Lock then got off & had time to let down the gate (tak^e $\frac{1}{2}$ to 1 minute) & then got on the foward boat again, by this time there would be suffitient water, passed through the Lock & the water above beginning to fall, they then passed through to the next Lock when the same Lock tender got off and let the lock down as before & then got on the ark again, &c &c down through the 12 Locks to the Gap, & let this last Remain down untill the pond Run down & then walked back in the afternoon putting up all the Locks, so as to hold water for the freshet the next day.

The operation of this was that the water in one pond made suffitient for to fill the channel to the other & so on to the Gap, & the accumulation of the 12 ponds here carried the fleet of 6 to 9 Boats or nests of arks down to the Slates, the pond here being 1 mile long, which together with the water from the 12 locks above carried the arks &c down to the 37 mile dam 17 miles below the slates & this would take them to & down the Delaware, & give 4 inches fresh on the Delaware

We have sent safely as many sections, as would make 190 to 200 ft in length. The average Boat say 140 or 150 ft long, 16 ft wide & sunk 14 or 16 in sections 16 to 25 ft long each

& the whole Boat under charge of 2 front & hind ore & 3 Hands carr^d 70 or 120 tons.

In the 3 last years of using these boats, we avaraged make in the whole of each season of 10 or 12 consecutive miles of these boats, all made entirely from the Tree every year, carr^e about 40,000 tons of coal a year

Our Lumber however held out as we had contemplated untill we finished the accending navigⁿ a Sett of hands would make a single section in $\frac{3}{4}$ hour, & 7 or 8 Boats of 5 to 7 Sec^e was a days work. the boards was plained by water & Plank jointed by water at Laurel Run & by crank & man power at M Chunk, the plank corked by $\frac{1}{2}$ in Sqr White Pine Strips put corner ways into the grooves to fit in the plank & the balance of corking was large Rushes brought from below Phil^a. & swngled tow for which we gave 1 c^t a lb.

The Boats were knocked to p^s in Phil^a & Lumber, sold, & the Iron sent Back by team, costing us \$15 to \$17 $\frac{1}{2}$ freight, a ton 80 miles. this for the 80 miles is say 16 cents a Ton a mile. Our Coal is now sent MC to Bristol 106 miles Includ^e toll & Freight for 1.24 cents a ton equal to 1 17/100 cents a ton a mile. Cist & Minor in 1816 p^d \$4 a ton Hallg Coal to MC we now pay by Back track 15 cts a ton.

The Boatmen took their boats to Philad^a & Walked back mostly at first of latter years, they hired teams on the way to bring them back faster.

On the 19 June 1838 the Accending Navigⁿ on the Up^r Secⁿ of 5 ft water was completed & past inspection & C^o authorized to take tolls &c &c.

The Decending Navigation f^m Stodartsville to Wrights Creek 12 21/100 miles being the extreme end of our limits Reported by Com^s as finished 27 Oct^r 1837 & the Goven^r authorized tolls on the same 2, Nov 1837.

in 1840, the Rail Road from White Haven to Wilksb^e was completed (20 miles) so as to be passible & our Engines on all the Planes, & we intended to put all in operation in 1841, but the flood on the Lehigh of 7 @ 8 Jan^y 1841, overflow'd all our work from Mudd Run to Easton & caused damages which cost about \$500,000 to Repair & increase its strength to be secure against a similar flood, put off the final completn of this Rail Road untill 1846.

The Back Track to our Mines by gravity, as I had suggested many years ago, when we was consid^r the best plan of our Rail Road in 1826, was put in practical operation this Spring 1846, together with my plan of the Safety Cars &c & our mules on this Road of 8 miles all discharged.

The Iron Bands which I suggested & made many experiments on, answer well & 8 mo 1846, I now consider all the great leading parts of the works of the C^o essentially completed & all proven to answer well.

The Locks on the Lehigh of 3 times the ordinary height, plagued us much to get engineers to take charge of building them, a model of which I made & sent to our C^o office, to convince our Board of the necessity of making them in that way, owing to the Great Lockage on the Up^r Secⁿ of Lehigh The Lockage M Chunk to White Haven is 600 ft nearly, & distance 25 miles.

The ordinary Lift of Lock being 8 ft would give 75 locks, this at 6 minutes passing a lock for 150 locks going both ways is 15 Hours or nearly 1½ days. Whereas by having the high lift & about 1/3d of the Locks we save a day to each boat in mak^e the trip allowing only 100 boats pass^e a day of 200 days at \$3. valu of a boat & crew a day is \$60,000 a year saved & as it now is, a Boat makes a trip up, or down, in less than one day, & the C^o. save 2/3rd of the Lock Tenders equal to \$6,000 a year. One of our Locks is 30 ft lift & fills or emptes in less

than 3 minutes. On apply^s to Engineers to carry out this plan, they one & all objected; some one plea, & some another, untill I came to E. A. Douglass, our present Superintendent & Engineer, & he on my nameing the plan to him agreed to it, at once, & at once I employ^d him.

One of the Engineers, E. M. I applied to, being more candid perhaps than the others, told me he must be candid & say, his objections to our employment, was, that he did not think our plan of High lifts would answer! & advised us not to make so great an experiment! I Reply^d to him, that our object in applying to him, was to do the work, & not to give us a plan! that we were too old in this kind of business to look to our young folks for plans!!

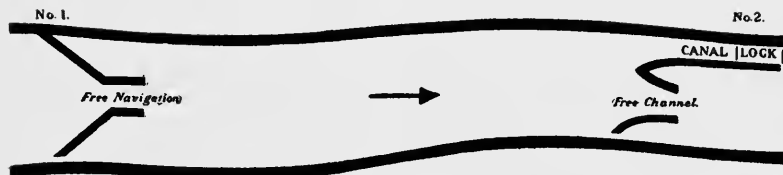
The truth is, if we had adopted the old plan of Locks of low lift, the work when done, would be too tedious in passing the locks to be of any value, to our C^o or to the Public; & as it now is made, it is the cheapest Navigⁿ of our two grand sections to use, & much the least in cost of annual Repair. And we have now lived to see the day that the public & Engineers is as much opposed to small Canals & Small Locks as they were at the beginning of our Canal, Opposed to Large Canals & Locks. & the Rival Canals (Schuylkill & others) are mak^s their Canal & Locks over again to get them Large, so as to meet our Rivalship & that of RailRoad.

It has been frequently said of latter years, that the Delaware Canal was made for the accomodation of our Coal from Lehigh &c & that we were consequently under great obligation to the State for making it &c & that they made the Locks 11 ft wide for our accomodation, whereas we wished them 22 ft the same dimentions as our own, but if they would not make them of our size, as the alternative we advised them of half our width, so that 2 boats going through our Lock at a time, one of them would fit theirs & go one at a time.

But our view was not to Canal along the Delaware, but to make channels & Slack Water, which is shown by this Dft & Petition, which we got signed & sent to Harrisburg in the years 1823-24 & used all our influence to get a Law passed accordingly.

With this plan we supposed it might take 6 to 12 locks on the Delaware & the Rest mere channels. We expected to get 4 ft water in lowest time & 5 at other times. & that it would carry Steam or boats of 150 tons & for which we had made 4 locks in advance on the Lehigh 30 ft wide & 130 ft long so as to have a steam boat navigⁿ of 150 tons burthen to Mauch Chunk. Had we succeeded with this plan in 1824, There can be little doubt the Lehigh would have sent $\frac{3}{4}$ of all the Anthracite Coal sent to tide, for many years to come & more than probable forever & now been entirely out of Debt. As we should have drawn the Coal Trade from Tuscarora & perhaps from Pottsville as Pottsville via MChunk to N York is 202 miles & by Schuylkill to NYork it is 23—& Schuy^l Navigⁿ 25 tons & ours 150 tons. All of the 2nd. Coal Region up Lehigh & all from Wilksb^e & Wyoming Region.

DELAWARE NAVIGATION



The above is a sketch of the plan proposed for the improvement of the River Delaware, by the Lehigh Coal and Navigation Company.

No. 1 Represents the kind of improvement to be adopted at all the falls where the water can be made three feet deep by means of wing dams (or by sinking the bottom of the river) to confine it in an open channel, without making it too rapid for a boat to ascend by the power of a steam engine—All such channels to be improved by the Company and kept in repair at their expense and to be used by the public **FREE OF TOLL.**

No. 2 Is an example of the improvement of a fall; where the water would be too rapid for the ascent of a steam boat by the power of her engines.—In all such cases, a Lock, thirty feet wide and one hundred and thirty feet long, would be made at one of the shores, and all boats, &c. using the Lock, either in ascending or descending would be subject to toll.—But at these places the present channels would be left uninterrupted and free for the passage of boats without toll. The work to be conducted in such a manner that the use of the river by boats and rafts, on the present plan, shall not be interrupted during any stage of its progress. Opening can be left in the wings near the shore to admit the upward passage of the Durham boats.

NOTE.—The above plan guarantees the continuance forever of a free open channel, improved and kept in repair at the expense of the Company, except the channels in the same fall with the lock, which will be left open as they now

are. It also guarantees forever against any obstructions to the usual running of the fish up the river—No part of the improvement overflows or injures private property.—The mills at present erected on the river will be secured in their titles, and finally the river will be made capable of transporting a greater amount of tonnage than any canal now in existence.

From the inspection of the map of Pennsylvania, it will be evident that the improvement of the Delaware must be a matter of deep interest to nearly one half of the population of this State and of New York, as Canals, to connect it with the Susquehanna and with the New-York grand canal at the Seneca river are quite practicable, and this route would have the advantage of being the shortest and of affording, upon arrival at Easton, the choice of the two best markets in the Country—that of Philadelphia, by the Delaware and that of New-York by the Jersey Canal.

The Lehigh Coal and Navigation Company, have proposed this plan, and are desirous it should be adopted, either by the state on its own account, or by a new incorporation, or if neither of these are willing to undertake the task, they ask the liberty of doing it themselves.—If the state would undertake it, and make the LOCKS FREE, the Lehigh Company would contribute handsomely to the work.

Presented 1823-24.

To the Honorable, the Senate & House of Representatives of the Commonwealth of Pennsylvania.

THE PETITION of the subscribers, citizens of Pennsylvania residing in the county of

Respectfully sheweth,

THAT we live in an age when the spirit for Inland Navigation is so general throughout our Country, that if advantage is not taken by our own State or its Citizens, in connecting

districts, naturally favourable for making an Artificial Navigation, those districts become in a greater or less degree insulated or locked up from a market by more enterprising neighbours, and perhaps no State is more favoured by nature for an interior navigation than our own, and no part more interesting to the public to be improved than the river Delaware.

Your Petitioners therefore respectfully request, that a law may be passed for making an ascending and descending navigation on the river Delaware, from Tide to Easton, for the account of, and benefit of the state, or permit the Lehigh Coal and Navigation Company to make that improvement, on the plan they have proposed and which is annexed hereto. And your Petitioners will ever pray, &c.

The Law for Improving the Delaware by Canal, was brought by Col^l Erie of Easton, who was then a Senator. We believed brought about to oppose our C^o procuring the Law for mak^s the River a Slackwater navigation, as that Borrough was allways opposed to us.

The State began their work in the Fall of 1828 & we had begun the Lehigh Canal in the spring of the same year, ours was finished & in use in the fall of 1829. But the Delaware Canal not till 3 years after. The Contractors on the Delaware, was permitted to fill up the Canal to bottom with bad material & when Reported to be finished, would not hold water. It was then put under my charge to make it a good job, which I was only able to effect by overhalling a large part of it.

Perhaps the greatest personal exposure I ever underwent, was in a few days after hearing of the Sweeping Flood on the Lehigh which occurred on the 7 @ 8 Jan^y 1841. I being then 60 years of age, less about 2 months, though in good health. I had then lived in the city for about 9 or 10 years, & experienced but little bodily exercise, during this time together with

age having weakened & stiffened my mussels, the exercise I had on going on foot, up the banks of the Canal to examine the inroads of the flood (with E. A. Douglass our Engineer) in snow & slush about 6 to 9 inches deep, from South Easton to the Lehigh Gap a distance of say 34 miles in 2 days, which nearly exhausted me. I felt it my duty to do all I could, & I gave up my strength freely. I was shocked & mortified, at the prostration of our Work Instead of our Improvement, being at the top of the neighboring ones, it now was at the bottom, together with the wide spread Ruin to many who had more of their Estate in it than they could bear without great suff^e, had the effect to not make the continuance of my Life desirable, so far as any thing in this world was concerned—as now all my labours of body & mind seemed a total failure. I expected nothing but the finger of scorn from all, Its true I felt no conviction of meriting this, as I thought I had throughout done, all I was able to do & at all times. But, as Results gives the Character to the Act, to my fellow beings, & they now goaded by losses of which I had been the principle Instrument, to leading them into, they would naturally encourage a hardness against me, & contempt.

The great flood of Jan^y 1841, put us on our Back again, & seemed to call up the last of our energies for this Great Work, at a time or in the year that we supposed we should have the whole of our work if not entirely perfected, in Profitable Operation throughout. In addition to the new demand for Money for our great Repairs & fortifying our work against any similar disaster, we had several \$100,000 to pay of Loan due this com^e Spring, & the Public beginning to conclude our Work was so far destroy'd that we should be unable to Repair it again & consequently be abandoned.

We found ourselves in the extraordinary dilemma, for
 providing for Repairing our Work,
 for providing money or some means of satisfy^g Loans due
 this year

& for protecting the Stock & Loan holders in general
 against a sacrafice of their property & thus loose all,
 We had nearly 1400 loan holders

& perhaps 400 or 600 stock holders

making the whole stock at this time \$1,503,550

& the whole loan 4,011,503.32

total stock & loan (1841) \$5,515,053.32

The whole of this might be sacrafised by a Debt due of
 \$100,000, & over \$300,000 was due in the spring.

To get through our Difficulties we executed a Mortgage
 Loan, secured on our Property in Phil^a & the Coal Mines &c
 not to exceed \$1,000,000 pble at 6 p C^t int^t quarterly, & pble
 in 10 years.

We proposed to all the loans com^g due this year to Rein-
 vest in the Mortgage loan, & to the Stock & Loan Holders to
 subscribe in Money to this Loan.

I subscribed to this Loan in Money first \$20,000

& afterward Do 10,000

\$30,000

\$20,000 of this I had to borrow on mortgage

But of the certificats fall^g due some would not subscribe
 & about 60 or 70,000 was carried to Judgment, of which I paid
 off & took the C^{os} Judgt over \$7,000 other Managers took
 together Do say 16,000 Doll^s more.

And I went security for stay of execution 1 year about
 \$27,000

The C^o had hard work to keep off Judg^s a year, & time en^o to execute a general Mortgage for which they got a Law to effect, in 1841. but finally they accomplished, the entire Security of their whole property, for 27 years, by putting a Mortgage on their whole property every wheres, conditioned for the payment of all their Creditors within s^d 27 years.

And I hope, within half of s^d 27 years all their Creditors will be paid, provided we have no Revolution in mean while & that there continu a Reasonable prosperity.

This year 1846 we hope to bring down from

our own mines over	300,000 tons,
& from mines above as a toll on	<u>250,000</u> “

& we have put tunnels under contract at the old Mines & Room Run which in 2 or 3 years will we believe be able to send annually to market 1,000,000 tons Coal a y^r and if the market takes this Coal, with an expected addition from the 2nd & 3rd Coal Region above us of 6 to 800,000 tons we I trust will not be many years paying all our debts, great as they now appear to be & surely are. The C^o has now paid up all my Judg^s & my securities, for them, & this season she expects to pay all Judgments against them, as well as essentially all prefered claims. & now 8 mo 1846, verry little of the C^os business now lays on me, which is generally brought to a state of maturity, that does not now, & I hope never will Require much more of my service. And could I now for the short Remainder of this life devote my mind to my Maker for the benefit of my own soul as constant as that I have hitherto devoted it to business to get me out of my difficulties, & secure my fellow men who had intrusted me & our C^o. with their property, Happy, thrice happy, would my lot be, for then I should be in close communion with him, who has gone to prepare mantions for me, to dwell with him in, to the

endless ages of all Eternity. Ah happy should I be to take the council of him who said, Seek & ye shall find, pray without ceasing & in every thing give God thanks & thus love all his creation through him that Loved me, & gave the sacrifice of his Body for me & for all.

The state of Engineering was barely known in Penns^a when I began my career in 1810, at the Falls of Schuylkill. Our Country had been since the Revolution, to this time, under the sway & influence of Merchantile operations, as the only avenue to fortune. Mashinests, was not known here, & perhaps no mechanic among us competent to turn a Metal joint water tight

So difficult was it to get Mechanics even of the indifferent kind we had, that our large steam Engine at Fair Mount cost the city \$80,000, (low pressure)

Oliver Evans afterwards agreed with the Councils to make one of High pressure for about $\frac{1}{3}$ rd this price, which was considered allmost presumptuous.

Since then in 1840, The Lehigh C^o. bought several for their planes, & one of them 140 horse power, (greater power than the one at Fair Mount) for about $\frac{1}{7}$ th the cost of the fair mount one.

No Locks or Canals had been made in Pennsylvania, that were in use, except 2 locks at York Haven Susq^a & the adjoining 2 miles of Canal, & no Dam had been built over a Stream in Penns^a greater than the Brandywine (Delaware State)

Freight or carriage in our State cost 15 to 20 cents a ton a mile—& now 1846 it is Reduced to 1 $\frac{1}{16}$ cent a ton a mile on the Lehigh & Delaware Canal (includ^g toll.)

It was perhaps under these peculiar circumstances of a lack of Mechanics & paucity of Public Improvements, which did not become conspicuous for 10 or 15 years after I began

my public life, that I am indebted to for the number & character of my discoveries.—I seemed indeed to have got into a field, of business, apparently untried in this Country! & the calls on me & our C^o for the saving of labour, in our immense outlays, seemed to make mine & our necessities the parent of our inventions.

Many of the following may have been invented by others before me (but of which I knew nothing) & they nevertheless are true inventions of mine.

My Inventions are as follows

- 1—Rollen Nails; with 4 wheels working together & indented to suit the nail &c.
- 2 Cast Iron plates to draw wire, the holes cast on a pin to make them hard.
- 3 Mashine, for washing Wire, by water power as a substitute for manual power.
- 4 Sheet Iron Boats—
- 5 Wire Fences—
- 6 “ Bridges—
- 7 drilling stone by water power (I drill^d the Blocks for Room Run Rail Road)
- 8 The plan of erecting Dams, wherein the head of Water lays On & not against the Dam—say 3 or more Base to one Rise & cover the top in strong, as on the Lehigh.
- 9 Bear Trap Lock, to make artifitial freshet navigation, as on the Lehigh.
- 10 The high lift locks on Lehigh & manner of feed.
- 11 The Safety Car, for inclined plans, to colapse & go into the pit, & save an extra track up the plans.
- 12 Propellers, to extend power to a distance.

(Erskine Hazard & E. A. Douglass invented the Friction Carrier & Qualifying Wheels, of the fiders at M

- Chunk & E. A. Douglass invented to Hold fasts, to prevent Runaways. My plan of friction Rollers were coggled Roller for going up a plane)
- 13 Ridding the Mules from the Mines, 8 Miles, by which their daily work was 40 miles, being Double distance.
 - 14 The Back track, as at M Chunk, to save the Mules on this 8 miles altogether.
 - 15 Greasing the Car wheels, through a sponge by which means the oil falls by drops & is allways Clean.
 - 16, Raising the Road Waggons 3 to 6 tons ea of Coal by Horse to tilt them into a shute & thence Run over a Skreen to load our boats.
 - 17 I propose this plan driven by Steam power to Raise & tilt our Coal boats, into sea vessels to save time & at about $1/10$ the present expense
 - 18 Scales, on Compound Levers & knife Edge fulcrum, put ours up at M Chunk in 1821 to 22. This scale is now in general use, from the Counter to the Weigh Lock in Canals.
 - 19 Plan for multiplying the Capacity of a Canal 4 fould, more or less, By lengthening the Locks, as proposed to Gov^r Porter 3 mo 5, 1842 for the State Canals.
 - 20 The system of Slack Water Navigation, in the place of Canals, for our Rivers, proposed it for Schuylkill to our Ledgeslature in 1812, 13.
 - 21 Grooving plank & Planeing Boards by Water Power, for our Coal arks.
 - 22 Balance Lock, by which most of the water is saved, in passing boats, & verry great increase of dispatch, in passing the boat through it.
 - 23, Iron Bands in place of Rope or Chain for Planes the Drum Requiring to be 1000 times the diameter of the band, to prevent, the staple getting a sett.

- 24 The Plan of Making a Channel & Lock Navigation for Steam boats on the Delaware, River, proposed in 1823
- 25 The Plan of Channel Navigation with, & without, Artificial freshets in the Lehigh, which we carried out practically & Regularly for 8 or 9 years & by which we introduced Anthracite Coal into Philad^a &c, 4 years before the Schuylkill Canal C^o altho we obtained our Law 3 years after that C^o.—12 miles of this kind of navigⁿ is yet Retained on the upper Lehigh from Stoddartsville to White Haven pool.
- 26 Water Break, effected by a cylinder & Dble stroke piston urged against water, to throw it through a valve that is under Regulation to give it all the Resistance Required & usse the same water allway. this I attached to the wheel of a coal car to prevent all accelerated velocity when I proposed making the Rail Road at Mauch Chunk, & applicable to any position Requiring great brake. viz



The Top is a pipe connected with each end of the cylinder with a valve in center for Regulation. this plan is adopted on the Penn^a Portage Rail Road & on the Lehigh Planes near Wilks barra

- 27 Plan & principle of High Dams & High lift Locks as introduced on the upper section of Lehigh, about $\frac{1}{3}$ the height of these, was deemed the greatest practical hight before

Attached is a copy of "A History of the Lehigh Coal and Navigation Company" published in 1840, on which is written

This pamphlet (History) I have appended to mine, as giving so far as it Runs my History, wrote out Ruff (first) by my self & finished by E. Hazard.

J. WHITE.

NOTE.—The following, which is part of another memorandum, is included, as showing more in detail the financial situation of Josiah White, which led him to undertake the lease of the lands of the Lehigh Coal Mine Company and the improvement of the Lehigh River.

I went out of business about the year 1808 & in 1810 I bot the Falls of Sch^l & by about 1813 I had got through my money about \$55,000 in the Improovement, at the Falls & Required more, when I call'd on Jos. Gillingham who had now got in to good circumstances, & proposed to him to loan me his note, for me to Raise money on, at Bank, which he unhesitatingly did, & it seemed to give him pleasure that he now was able to pay his debt to me.

Some time after the above accomodation to me, I sold Jos Gill^m my little mill at the Falls (I think for \$12,000) which was a further accomodation to me, but wether he bought it for my accomodation or his own profit I leave.

After this he bought the balance mak^e 7/9* of all my interest at the falls, (includ^e the small mill), which was a further accomodation to me, but I suppose his bargain was to meet his own interest, as I had done & he to advance the money for its improvement on interest for my half.

After this he joined me & Erskine Hazard in the "Whitestown Manufacturing C^o which also was a further accomodation to me, as he found the money^d capital for our business.

We all lost on the Factory, which was his Risque as well as ours & as we found great difficulty in letting our water powers on the West side of the Falls, from the backwater from Ice & tide & the Whitestown Manufacturing C^o. proving to be a loosing concern, I became alarmed, that I should ultimately become a bankrupt.

*This is an error, it should be 7/16.

If our power would let at our prices, on the west side of Sch^l, It would have produced as I then estimated, for the whole power of the falls the interest of \$250,000, or \$15,000 a yr of which 9/16 was mine, & then I would have declined all Manufacturing business & Relied on my Income, as I had originally intended when I first engaged at the Falls. But the power to much extent, would not Rent, & I my Debt at the Bank of Germantown amounted to about \$20,000. I became greatly alarmed.

In 11 mo 1817 I proposed to the Schuylkill Navigⁿ C^o to make temporary improvement, so as to get coal down in one year! & to agree to charge toll not to exceed 5 cts a bu = 1.40 cts a ton! but they hooted at the idea of less than en^o to Reduce the cost of transportation to $\frac{1}{2}$ or $\frac{2}{3}$ rd the Cost by Carting on the Turnpike say to about 30 cts a bu or \$8.40 a ton, & declined the temporary navigⁿ altogether.

I then proposed they should authorize us to moove our Dam to any place above Fair Mount bridge so that we could get the supply^s of the City with Water Power to Raise its Water into their Reserva at Fair Mount, which they also declined.

Nothing but Ruin, seemed to present to me, unless I could leave the Falls & support my family elsewhere, I was then in my Prime of life (37 yrs old).

I made diligent iquiry about the Coal on the Lehigh, & the C^o which owned it to the amount of about 10,000 acres, and it ocured to me that I could make such a moove in that Coal & Navigⁿ of the Lehigh & thus get out of my difficulties.

I proposed this to Jos Gillingham, but he discouraged it. finally I concluded to go on the ground to examine the River & the Coal to judge if any thing could be done. & on the 23 or 24 of 12 mo 1817 I concluded to Start for its examination. And as I felt too poor to hire a horse, if I could borrow one,

not having one of my own, I applied to Jos Gillingham to loan me his Horse, which he declined doing saying the Roads were so Ruff his horse would not stand it, & further tried to discourage my going.

I concluded that the Horse could stand the journey as well as myself, & if I was willing to expose myself, & he not willing to expose his Horse, that all future connection was at an end with him, in Relation to the Lehigh project, & if I found prospects there desireable I would not let him know anything about it.

Things then looked so promising that myself G F a Hauto & E Hazard obtained a lease for the 10,000 acres coal land for 20 y^s for an Ear of Corn p^r year if demanded & got the Law for improv^e the Lehigh by 2 mo 18, 1818, & all without JG knowing anything about it.

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